

IDENTIFICATION

PRODUCT CODE! MAINDEC-8E'D8AC-D

PRODUCT NAME! DK8E CLOCKS DIAGNOSTIC

DATE CREATED! OCTOBER 8, 1971

MAINTAINER! DIAGNOSTIC PROGRAMMING GROUP

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55

ES, SCHMITT TRIGGER INPUT LOGIC TEST

WITH THE PROGRAM IN BANK 0, SET THE SWITCH REGISTER TO 0200.

RESS ADDRESS LOAD;

SET SWITCH REGISTER TO 0000.

SET THE SWITCH REGISTER TO INDICATE D84ES SCHMITT TRIGGER INPUT LOGIC TEST.

PRESS CLEAR AND THEN CONTINUE.

THE PROGRAM SHOULD RUN UNTIL AN ERROR OCCURS OR UNTIL STOPPED BY THE OPERATOR.

THE TTY WILL SIGNAL "DK8E PASS COMPLETE" AT
THE COMPLETION OF EVERY PASS,

五

EXTERNA PULSE SCOPE LOOP TEST

WITH THE PROGRAM IN MEMORY, SET THE SWITCH REGISTER TO 0200.

RESS ADDRESS LOAD;

SET SWITCH REGISTER TO 0000.

KEY SWITCH REGISTER TO INDICATE EXTERNAL PULSE SCOPE LOOP TEST:

PRESS CLEAR AND THEN PRESS CONTINUE.

USE OSCILLOSCOPE TO VERIFY 40 MICRO SECOND PULSE RATE AT
FJ2, FJ1, HM1, AND HM2 ON THE DK8-EP7DK8-ES MODULES.

USE OSCILLOSCOPE TO VERIFY 40 MICRO SECOND PULSE RATE AT OVERFLOW ON DK8=ES CLOCK FRONT PANEL. (DK8=ES ONLY)

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BOXES EXTERNAL CLOCK SCOPE LOOP TEST

WITH THE PROGRAM IN MEMORY, SET THE SWITCH REGISTER TO 0200.

ADDRESS ADDRESS LOAD;

SET SWITCH REGISTER TO 0000,

SET SWITCH REGISTER TO INDICATE EXTERNAL CLOCK SCOPE LOOP TEST.

PRESS CLEAR AND THEN PRESS CONTINUE.

GROUND CLOCK IN ON DK8-ES CLOCK FRONT PANEL.

THE TTY BELL WILL SIGNAL, IF AN EXTERNAL CLOCK IN WAS RECEIVED.

三

OPERATING PROCEDURE

5.1 OPERATIONAL SWITCH SETTINGS

NONE

5.2 SUBROUTINE ABSTRACTS

NONE

5.3 OPERATOR TEST SELECTION

5.3.1 DK8=EA OR DK8=EC CLOCK OPTION

INSTALL DK8=EA OR DK8=EC CLOCK OPTION

RUN DK8=EA/DK8=EC TEST 4.3.1.1.

5.3.2 DK8=EP CLOCK OPTION

INSTALL DK8=EP CLOCK OPTION,

RUN DK8=EP/DK8=ES REGISTER TEST 4.3.2.1.

RUN DK8=EP/DK8=ES EXTERNAL PULSE SCOPE LOOP TEST 4.3.4.1.

5.3.3 DK8=ES CLOCK OPTION

INSTALL DK8=ES CLOCK OPTION,

RUN DK8=EP/DK8=ES REGISTER TEST 4.3.2.2.

CONNECT EXTERNAL SOURCE FREQUENCY LOCATED AT J5 ON THE PDP8/E
POWER SUPPLY TO THE EXTERNAL SCHMITT TRIGGER INPUT LOGIC VIA
THE DK8=ES CLOCK FRONT PANEL WITH THE SPECIAL TEST CABLE.

SET THE THREE SLOPE SELECTION SWITCHES ON DK8=ES CLOCK
FRONT PANEL TO THE POSITIVE POSITION.

ADJUST THE THREE INPUT THRESHOLD POTENTIOMETERS ON
DK8=ES CLOCK FRONT PANEL TO THE CENTER POSITION.

RUN THE DK8=ES SCHMITT TRIGGER INPUT LOGIC TEST 4.3.3.1.

RUN THE DK8=EP/DK8=ES EXTERNAL PULSE SCOPE LOOP TEST 4.3.4.1.

RUN THE DK8=ES EXTERNAL CLOCK SCOPE LOOP TEST 4.3.5.1.

6. ERRORS

ALL RECOVERABLE ERRORS ENCOUNTERED IN THE PROGRAM WILL
RESULT IN AN ERROR HALT OR AN ERROR TYPEOUT AND THEN
AN ERROR HALT.

6.1 ERRORS AND DISCUSSION

6.1.1 ERROR HALTS

ERROR HALTS IN PROGRAM ARE AS FOLLOWS:

EHLT11 MONITOR ERROR HALT, READ ERROR TYPE OUT.

EHLT21 SKIP TRAP, CLZE

EHLT31 SKIP TRAP, CLOE

EHLT41 SKIP TRAP, CLOE

EHLT51 SKIP TRAP, CLAB

EHLT61 SKIP TRAP, CLEN

EHLT71 SKIP TRAP, CLSA

EHLT81 SKIP TRAP, CLBA

EHLT111 SKIP TRAP, CLCA

6.1.2 ERROR TYPEOUTS

ERROR TYPEOUTS IN PROGRAM ARE AS FOLLOWS:

TEST XXXX FAILED, STARTING ADDRESS XXXX

THE GOOD AC = XXXX AND BAD AC = XXXX

CLOCK BUFFER REGISTER AND AC TRANSFER FAILED

CLOCK COUNTER REGISTER AND AC TRANSFER FAILED

CLOCK ENABLE REGISTER AND AC TRANSFER FAILED

THE AC WAS CHANGED BY A CLOCK IOT

PROGRAM INTERRUPT FAILED, NO INTERRUPT EXPECTED

PROGRAM INTERRUPT FAILED, INTERRUPT EXPECTED

CLOCK SKIP FAILED, NO SKIP EXPECTED

CLOCK SKIP FAILED, SKIP EXPECTED

CLOCK OUTPUT FAILED, CLOCK FREQUENCY FAST

CLOCK OUTPUT FAILED, CLOCK FREQUENCY SLOW

6.2 ERROR RECOVERY

ALL ERRORS ENCOUNTERED MUST BE CORRECTED BEFORE PROCEEDING
ON IN THE PROGRAM IN ALL CASES

FURTHER INFORMATION,

6:2:1 SCOPE LOOPS

A SCOPE LOOP IS AVAILABLE FOR ALL MONITOR ERROR HALTS; THE OPERATOR MAY ENTER A SCOPE LOOP AFTER A MONITOR ERROR HALT BY DOING THE FOLLOWING.

SET SWR4=1 TO INDICATE INHIBIT ERROR HALT.

SET SWR5=1 TO INDICATE ENTER SCOPE LOOP.

SET SWR6=1 TO INDICATE LOOP ON THIS TEST.

PRESS CLEAR AND THEN PRESS CONTINUE.

SET SWR2=1 TO INHIBIT ERROR TYPEOUT.

SET SWR3=1 TO INHIBIT ERROR BELL.

7: RESTRICTIONS

7:1 STARTING RESTRICTIONS

NONE

7:2 OPERATING RESTRICTIONS

THE PROGRAM MUST RESIDE IN BANK 0:

PD=0E WITH THE DK8=EA, DK8=EC, DK8=ES, OR THE DK8=EP CLOCK OPTION INSTALLED;

THE EXT. CPS SOURCE USED IN THE DK8=ES EXTERNAL SCHMITT TRIGGER INPUT LOGIC TEST MUST BE DISCONNECTED WHEN RUNNING THE DK8=EP/DK8=ES REGISTER TEST.

THE PD=0E MUST BE RUNNING FAST CYCLE "1.2" MICRO. SECONDS;

ALL CLOCK OUTPUTS SHOULD BE VERIFIED WITH AN OSCILLOSCOPE TO INSURE CORRECT OPERATION.

8: MISCELLANEOUS

8:1 SPECIFICATIONS

THE DK8=EA CLOCK COUNTS AT INTERVALS OF TIME AT 100 OR 120 TIMES A SECOND; THE FREQUENCY IS DETERMINED BY THE FULL WAVE RECTIFIER NETWORK WHICH OPERATES OFF THE 50 OR 60 CPS LINE WHICH EVER IT MAY BE; THIS MAKES THE CLOCK CAPABLE OF SUPPLYING PROGRAM INTERRUPT REQUESTS AT A RATE OF 100 OR 120 TIMES A SECOND;

8:2 EXTENSION TIME

OK8-EA7OK8-EC TEST, APPROXIMATIVELY 2.5 MINUTES PER PASS,
OK8-EP7OK8-ES REGISTER TEST, APPROXIMATIVELY 3.5 MINUTES
PER PASS.

OK8-ES SCHMITT TRIGGER INPUT LOGIC TEST, APPROXIMATIVELY
2 MINUTES PER PASS,

9: PROGRAM DISCRIPTION

9:1 OK8-EA OR OK8-EC CLOCK

THE PROGRAM EXERCISES AND TESTS THE FOLLOWING IOT'S FOR CORRECT
OPERATION AND FUNCTION:

SKIP ON A CLOCK FLAG AND CLEAR THE FLAG (CLSK)
OCTAL CODE: 6133
OPERATION: SENSES THE CLOCK FLAG, WHICH IS SET WITH
EACH CLOCK PULSE; IF IT IS SET, THE NEXT
SEQUENTIAL INSTRUCTION IS SKIPPED AND THE
FLAG IS THEN CLEARED.

ENABLE CLOCK INTERRUPT (CLEI)
OCTAL CODE: 6131
OPERATION: ENABLES THE CLOCK FLAG, WHICH IS SET WITH
EACH CLOCK PULSE, TO CAUSE A PROGRAM
INTERRUPT REQUEST; THE FLAG WILL REMAIN
SET UNTIL CLEARED WITH CLSK.

DISABLE CLOCK INTERRUPT (CLED)
OCTAL CODE: 6132
OPERATION: DISABLES THE CLOCK FLAG FROM CAUSING
AN INTERRUPT REQUEST; THE FLAG IS NOT AFFECTED.

9:2 OK8-EP7OK8-ES CLOCK

THE PROGRAM EXERCISES AND TESTS THE FOLLOWING IOT'S FOR CORRECT
OPERATION AND FUNCTION:

CLEAR THE CLOCK ENABLE REGISTER PER AC (CLZE)
OCTAL CODE: 6130
OPERATION: CLEARS THE BITS IN THE CLOCK ENABLE
REGISTER CORRESPONDING TO THOSE BITS
SET IN THE AC, THE AC IS NOT AFFECTED.

SKIP ON A CLOCK INTERRUPT (CLSK)
OCTAL CODE: 6131
OPERATION: SENSES FOR INTERRUPT CONDITIONS, IF THE
CONDITIONS ARE PRESENT THE NEXT SEQUENTIAL
INSTRUCTION IS SKIPPED; THE CONDITIONS
ARE AS FOLLOWS:
A: ENABLE EVENT INTERRUPT 1 AND INPUT 4
B: ENABLE EVENT INTERRUPT 2 AND INPUT 2
C: ENABLE EVENT INTERRUPT 3 AND INPUT 1
D: ENABLE OVERFLOW INTERRUPT AND OVERFLOW

AC TO CLOCK ENABLE REGISTER (CLOE)

AC TEL CODE
OPERATION

6132 CAUSES THE CONTENTS OF THE AC TO BE
LOADED INTO THE CLOCK ENABLE
REGISTER CORRESPONDING TO THOSE BITS
SET IN THE AC. THE AC IS NOT AFFECTED.
CLOCK ENABLE REGISTER FUNCTIONS ARE AS
FOLLOWS,

AC BIT

FUNCTION

0 ENABLE CLOCK OVERFLOW

1 & 2 MODE CONTROL

00 COUNTER RUNS AT SELECTED RATE.
OVERFLOW OCCURS EVERY 4096 COUNTS.
OVERFLOW REMAINS SET UNTIL CLEARED BY
(CLSA) IOT 6135.

01 COUNTER RUNS AT SELECTED RATE.
OVERFLOW CAUSES THE CLOCK BUFFER
REGISTER TO BE TRANSFERRED TO THE
CLOCK COUNTER REGISTER WHICH WILL
CONTINUE TO RUN AFTER TRANSFER.
OVERFLOW WILL REMAIN SET UNTIL
CLEARED BY (CLSA) IOT 6135.

10 COUNTER RUNS AT SELECTED RATE.
AN EXTERNAL SCHMITT TRIGGER SIGNAL,
IF ENABLED, CAUSES THE CLOCK COUNTER
REGISTER TO BE TRANSFERRED TO THE CLOCK
BUFFER REGISTER AND THE CLOCK COUNTER
CONTINUES TO RUN.

11 COUNTER RUNS AT SELECTED RATE.
AN EXTERNAL SCHMITT TRIGGER SIGNAL,
IF ENABLED, CAUSES THE CLOCK COUNTER
REGISTER TO BE TRANSFERRED TO THE
CLOCK BUFFER REGISTER AND THE CLOCK
COUNTER WILL CONTINUE TO RUN FROM 0.

3,4 85

COUNT RATE

000 STOP
001 EXTERNAL CLOCK SOURCE
010 100 CPS
011 1000 CPS
100 10000 CPS
101 100000 CPS
110 1000000 CPS
111 STOP

WHEN SET TO A 1, OVERFLOW CAUSES
AN EXTERNAL PULSE.

WHEN SET TO A 1, THE CLOCK COUNTER
IS INHIBITED FROM COUNTING.

WHEN SET TO A 1, ENABLES EXTERNAL
SCHMITT TRIGGER SIGNALS AND THE OVERFLOW
FLOP TO CAUSE AN INTERRUPT REQUEST IF
THEY ARE ENABLED.

9, 10 & 11 ENABLE SCHMITT TRIGGER EVENTS

100 INPUT 4
010 INPUT 2
001 INPUT 1

AC TO CLOCK BUFFER REGISTER (CLAB)

6133
CAUSES THE CONTENTS OF THE AC TO BE
TRANSFERRED INTO THE CLOCK BUFFER REGISTER;
THE CONTENTS OF BUFFER REGISTER IS THEN
TRANSFERRED TO THE CLOCK COUNTER
REGISTER, THE AC IS NOT AFFECTED,

CLOCK ENABLE REGISTER TO AC (CLEN)

6134
CAUSES THE CONTENTS OF THE CLOCK ENABLE
REGISTER TO BE TRANSFERRED TO THE AC;
THE ENABLE REGISTER IS NOT AFFECTED,

CLOCK STATUS TO AC (CLSA)

6135
CAUSES THE CONTENTS OF THE CLOCK STATUS
REGISTER TO BE TRANSFERRED INTO THE AC;
THE STATUS BITS ARE THEN CLEARED
CORRESPONDING TO THOSE BITS THAT WERE
SET IN THE AC, THE STATUS REGISTER
FUNCTIONS ARE AS FOLLOWS.

AC BIT STATUS CONDITION

0000000000000000

OVERFLOW

NOT USED

INPUT 4

INPUT 2

INPUT 1

CLOCK BUFFER REGISTER TO AC (CLBA)

6136
CAUSES THE CONTENTS OF THE CLOCK
BUFFER REGISTER TO BE TRANSFERRED
INTO THE AC, THE BUFFER REGISTER
IS NOT AFFECTED,

CLOCK COUNTER REGISTER TO AC (CLCA)

6137

OPERATIONI

10:

LISTING
--9--99

2

CAUSES THE CONTENTS OF THE CLOCK
COUNTER TO BE TRANSFERRED INTO THE
CLOCK BUFFER REGISTER. THE BUFFER
REGISTER IS THEN TRANSFERRED INTO
THE AC. THE COUNTER REGISTER
IS NOT AFFECTED.

/DK8E CLOCKS DIAGNOSTIC

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/THE STARTING ADDRESS 0200 OCTAL.

/PLEASE READ DOCUMENT FOR FURTHER INFORMATION.

0000	0000	0000	0000
0001	0001	0000	0000
0002	0002	0007	0007
0003	0003	AUTO10,	0000
0004	0000	SAVAC,	0000
0005	0000	K7700,	7700
0006	0207	K0100,	0100
0007	0007	K4000,	4000
0010	0000	K0200,	0200
0011	0000	K2525,	2525
0012	7700	K5252,	5252
0013	0100	X101A,	101A
0014	4000	X101B,	101B
0015	0200	X101C,	101C
0016	2525	X101D,	101D
0017	5252	X101E,	101E
0020	5102	X101F,	101F
0021	5107	X101F1,	101F1
0022	5114	X101G,	101G
0023	5121	X101H,	101H
0024	5127	X101I,	101I
0025	5134	X101J,	101J
0026	5142	X101K,	101K
0027	5146	X101S,	101S
0030	5154	X101S1,	101S1
0031	5163	X101S2,	101S2
0032	5200	X101S3,	101S3
0033	5207	REGA,	0000
0034	5350	REG,	0000
0035	5360	REG,	0000
0036	5370	REG,	0000
0037	5400	REG,	0000
0040	0200	REG,	0000
0041	0000	REG,	0000
0042	0000	REG,	0000
0043	0000	REG,	0000
0044	0000	REG,	0000
0045	0000	SKPWAT,	XWAIT
0046	5642	XPIG01,	PIG01
0047	5255	XPIG02,	PIG02
0050	5270	XPIG03,	PIG03
0051	5323	XPIG04,	PIG04
0052	5336	XPIG05,	PIG05
0053	5234		

0054	XISZ,	ISELOP
0055	RANDY,	RANDOM
0056	XSNDRV,	SNDRV
0057	XSYNC,	SYNC
0060	XCLREG,	CLREG
0061	OVER2,	BGNEAC +2
0062	OVER2A,	BGNEAC
0063	XDK8EP,	TS130
0064	XMITT,	TS1202
0065	XMITT1,	TS1202 #3
0066	XLAS,	SWLAS
0067	XGTAD,	GTAD
0070	SEND,	0000
0071	RECEV,	0000
0072	NERROR,	NERROR
0073	ERROR,	ERROR
0074	XCLOCK,	CLOCK
0075	CLOCKS,	0000
0076	KREGC,	0000
0077	LOOP,	0000
0100	JMP12,	JMP 1 2
0101	XCRLF,	CRLF
0102	XREG,	PREG
0103	XSORT,	SORT
0104	XOCTEL,	OCTEL
0105	XMESS,	MESS
0106	XPRINT,	PRINT
0107	XTYPE,	TYPE
0110	XBELL,	BELL
0111	KPRMT1,	7730
0112	7400,	7400
0113	K71CPS,	0000
0114	K6007,	6007
0115	K0000,	0000
0116	K0400,	0400
0117	K6000,	6000
0120	K3000,	3000
0121	K5000,	5000
0122	K7770,	7770
0123	K0260,	0260
0124	K4100,	4100
0125	K3740,	3740
0126	K0240,	0240
0127	K0E17,	0017
0128	K7774,	7774
0131	K7773,	7773
0132	K7772,	7772
0133	K0077,	0077
0134	K0215,	0215
0135	K0212,	0212
0136	K0377,	0377
0137	K0040,	0040
0140	K0020,	0020
0141	K7000,	7000
0142	K0010,	0010

2143 2000 K2000, 2000
2144 1000 K1000, 1000
2145 0300 K0300, 0300
2146 0500 K0500, 0500
2147 0600 K0600, 0600
2150 0700 K0700, 0700
2151 2725 KTA, 2725
2152 2650 KTA1, 2650
2153 7425 KTB, 7425
2154 7350 KTB1, 7350
2155 7753 KTC, 7753
2156 0225 KTC1, 0225
2157 0150 KTC2, 0150
2160 1450 KTD, 1450
2161 1425 KTD1, 1425
2162 6575 KTE, 6575
2163 6525 KTE1, 6525
2164 5600 XSET0, 5600
2165 5450 XOPR, 5450
2166 0070 PATCH, 0070
2167 5771 XGETM, 5771
2170 5740 XPASS, 5740
2171 1795 XCR\$1, 1795
2172 2200 XCR\$2, 2200
2173 2003 XCR\$3, 2003
2174 2565 XCR\$4, 2565
2175 4003 XCR\$5, 4003
/ *0200
/ BEGIN,

0200 7300 CLA CLL
0201 6007 JMS I XCRLF
0202 4501 JMS I XPRINT
0203 4506 DKMES
0204 6000 JMS I XCRLF
0205 4501 JMS I XCLREG
0206 4460 JMS I XSET0
0207 4564 JMS I XLAS
0210 4466 JMS I XMITF1
0211 5465 JMP I XDK8EP
0212 5463 JMP I XCLOCKS
0213 4474 JMS I XOPR
0214 4565 JMS I XGETH
0215 4567 JMS I XCLREG
0216 3077 DCA LOOP
0217 4460 JMS I XCLREG
0220 3040 DCA REGA
/ DOES IOT CLEI CHANGE AC ?
/ CHECK ALL COMBINATIONS
/ TST0, TAD REGA
0221 1040 DCA SEND
0222 3070 TAD SEND
0223 1070 JMS I XIOTA
0224 4420
/ CLEAR THE AC AND LINK
/ CAF OR CLEAR THE WORLD
/ CRLF
/ PRINT DK8E CLOCKS DIAGNOSTIC
/ MESSAGE POINTER
/ CRLF
/ CLEAR ALL MY REGISTERS
/ SET UP FOR PI RETURN
/ GET HIS SWITCHES
/ TEST SCHMITT
/ TEST DK8EP CLOCK
/ TEST DK8EA OR DK8EC
/ SORT AND PRINT FREQ, SELECTED
/ GET TIME LENGTH
/ SET LOOP COUNTER
/ CLEAR ALL REGISTERS
/ GET AC NUMBER
/ SAVE OUTPUT FOR ERROR PRINTER
/ IOT 6131, CLEI


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0225 3071 DCA RECEV /SAVE INPUT FOR ERROR PRINTER
0226 1071 TAD RECEV
0227 4456 JMS I XSNDRV /CHECK SEND AND RECEV REGISTERS
0230 4472 JMS I NERRR /CHECK NON-ERROR HANDLER.
0231 4473 JMS I ERROR /ERROR! CLEI CHANGED AC.
0232 3000 /TST0 ERROR MESSAGE.
0233 0221 TST0 /SCOPE LOOP.
0234 3040 DCA REGA

/DOES IOT CLED CHANGE AC ?
/CHECK ALL COMBINATIONS
TST1,
0235 1040 TAD REGA /GET AC NUMBER
0236 3070 DCA SEND /SAVE OUTPUT FOR ERROR PRINTER
0237 1070 TAD SEND
0240 4421 JMS I X107B /IOT 6132, CLED
0241 3071 DCA RECEV /SAVE INPUT FOR ERROR PRINTER
0242 1071 TAD RECEV
0243 4456 JMS I XSNDRV /CHECK SEND AND RECEV REGISTERS
0244 4472 JMS I NERRR /CHECK NON-ERROR HANDLER.
0245 4473 JMS I ERROR /ERROR! CLED CHANGED AC.
0246 3001 /TST1 ERROR MESSAGE.
0247 0235 TST1 /SCOPE LOOP.
0250 3040 DCA REGA

/DOES IOT CLSK CHANGE AC ?
/CHECK ALL COMBINATIONS
TST2,
0251 1040 TAD REGA /GET AC NUMBER
0252 3070 DCA SEND /SAVE OUTPUT FOR ERROR PRINTER
0253 1070 TAD SEND
0254 4422 JMS I X107B /IOT 6133, CLSK
0255 7000 NOP /WAIT JUST IN CASE !
0256 3071 DCA RECEV /SAVE INPUT FOR ERROR PRINTER
0257 1071 TAD RECEV
0260 4456 JMS I XSNDRV /CHECK SEND AND RECEV REGISTERS
0261 4472 JMS I NERRR /CHECK NON-ERROR HANDLER.
0262 4473 JMS I ERROR /ERROR! CLSK CHANGED AC.
0263 3002 /TST2 ERROR MESSAGE.
0264 0251 TST2 /SCOPE LOOP.

/TEST FOR NO INTERRUPT ROST.
TST3,
0265 6007 JMS I X1060 /CAF OR CLEAR THE WORLD
0266 4477 JMS I NERRR /GO TO 71, NO FI EXPECTED
0267 4472 JMS I ERROR /CHECK NON-ERROR HANDLER
0270 4473 JMS I ERROR /ERROR! OR INT, ROST, FAILED
0271 1003 /TST3 ERROR MESSAGE
0272 0265 TST3 /SCOPE LOOP

/DOES CLSK SKIP ON A CLOCK FLAG
TST4,
0273 1113 TAD KTICPS /SET UP TIMER
0274 3045 DCA REGA /IOT 6133, CLSK
0275 4422 JMS I X107B

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0276 7000
0277 4422
0300 4446
0301 4472
0302 4473
0303 0404
0304 0273

NOP
JMS I XIOTC
JMS I SKPWAT
JMS I NERROR
JMS I ERROR
0404
TST4
/SCOPE LOOP

/DOES CLSK CLEAR THE FLAG ?

0305 1113
0306 3045
0307 4422
0310 7000
0311 4422
0312 4446
0313 7410
0314 5704
0315 4422
0316 4472
0317 4473
0320 0005
0321 0305

TST5,
TAD KTICPS
DCA RESF
JMS I XIOTC
NOP
JMS I XIOTC
JMS I SKPWAT
SKP I 10
JMS I XIOTC
JMS I NERROR
JMS I ERROR
0005
TST5
/SET UP TIMER
/IOT 6133, CLSK
/IOT 6133, CLSK
/GO WAIT FOR FLAG
/GO THE FLAG
/GO BACK TO TEST 4
/IOT 6133, CLSK
/CHECK NON-ERROR HANDLER
/ERRORI CLSK CLEAR THE FLAG FAILED
/TST5 ERROR MESSAGE
/SCOPE LOOP

/DOES CLEI ENABLE CLOCK INTERRUPT ?

0322 4420
0323 4450
0324 4472
0325 4473
0326 1406
0327 0322

TST6,
JMS I XIOTA
JMS I XPIG02
JMS I NERROR
JMS I ERROR
1406
TST6
/IOT 6131, CLEI
/GO TO PI, PI EXPECTED
/CHECK NON-ERROR HANDLER
/ERRORI DID CLEI ENABLE CLOCK INTERRUPT ?
/TST6 ERROR MESSAGE
/SCOPE LOOP

/DOES CLED DISABLE CLOCK INTERRUPT ?

0330 4420
0331 4421
0332 4447
0333 4472
0334 4473
0335 1007
0336 0330

TST7,
JMS I XIOTA
JMS I XIOTB
JMS I XPIG01
JMS I NERROR
JMS I ERROR
1007
TST7
/IOT 6131, CLEI
/IOT 6132, CLED
/GO TO PI, NO PI EXPECTED
/CHECK NON-ERROR HANDLER
/ERRORI DID CLED DISABLE CLOCK INTERRUPT ?
/TST7 ERROR MESSAGE
/SCOPE LOOP

/DOES CAF DISABLE CLOCK INTERRUPT ?

0337 4420
0340 6007
0341 4447
0342 4472
0343 4473
0344 1010
0345 0337

TST10,
JMS I XIOTA
JMS I XPIG01
JMS I NERROR
JMS I ERROR
1010
TST10
/IOT 6131, CLEI
/CAF OR CLEAR THE WORLD
/GO TO PI, NO PI EXPECTED
/CHECK NON-ERROR HANDLER
/ERRORI DID CAF DISABLE CLOCK INTERRUPT ?
/TST10 ERROR MESSAGE
/SCOPE LOOP

/DOES CLEI ENABLE CLOCK INTERRUPT ?

PAL10	V142	2200CT-73	9155	PAGE 1-5
0346	4420	TST11,	JMS I XIOTY	/IOT 6131, CLEI
0347	4447		JMS I XPIG01	/GO TO PI, PI EXPECTED
0350	5354		JMP T11A	
0351	4420		JMS I XIOTY	/IOT 6131, CLEI
0352	4450		JMS I XPIG02	/GO TO PI, PI EXPECTED
0353	4472		JMS I NERROR	/CHECK NON-ERROR HANDLER.
0354	4473		JMS I ERROR	/ERROR! CLEI AND CLED FAST TOGGLE
0355	1411		1411	/TST11 ERROR MESSAGE
0356	0346		TST11	/SCOPE,
			/DOES CLED DISABLE CLOCK INTERRUPT ?	
0357	4420	TST12,	JMS I XIOTY	/IOT 6131, CLEI
0360	4421		JMS I XIOTB	/IOT 6132, CLED
0361	4450		JMS I XPIG02	/GO TO PI, NO PI EXPECTED
0362	5366		JMP T12A	
0363	4421		JMS I XIOTB	/IOT 6132, CLED
0364	4447		JMS I XPIG01	/GO TO PI, NO PI EXPECTED
0365	4472		JMS I NERROR	/CHECK NON-ERROR HANDLER.
0366	4473		JMS I ERROR	/ERROR! CLEI AND CLED FAST TOGGLE
0367	1012		1012	/TST12 ERROR MESSAGE
0370	0357		TST12	/SCOPE LOOP.
			/TEST DECODER FOR 6135, NOT CLEI	
0371	4481	TST13,	JMS I XIOTB	/IOT 6132, CLED
0372	4431		JMS I XIOTY	/IOT 6135, NOT AN IOT 6131
0373	4447		JMS I XPIG01	/GO TO PI, NO PI EXPECTED
0374	4472		JMS I NERROR	/CHECK NON-ERROR HANDLER.
0375	4473		JMS I ERROR	/ERROR! DID DECODER WORK
0376	1013		1013	/TST13 ERROR MESSAGE
0377	0371		TST13	/SCOPE LOOP.
			/TEST DECODER FOR A 6136, NOT-CLED	
0400	4420	TST14,	JMS I XIOTY	/IOT 6131, CLEI
0401	4432		JMS I XIOTJ	/IOT 6136, NOT AN IOT 6132.
0402	4450		JMS I XPIG02	/GO TO PI, PI EXPECTED
0403	4472		JMS I NERROR	/CHECK NON-ERROR HANDLER.
0404	4473		JMS I ERROR	/ERROR! DID DECODER WORK
0405	1414		1414	/TST14 ERROR MESSAGE
0406	0420		TST14	/SCOPE LOOP.
			/TEST DECODER FOR 6137, NOT CLSK	
0407	1113	TST15,	TAD KTICPS	
0410	3045		DCA REGF	/SET UP TIMER
0411	4422		JMS I XIOTB	/IOT 6132, CLED
0412	7000		NOP	
0413	4433		JMS I XIOTK	/IOT 6137, NOT AN IOT 6133
0414	4446		JMS I SKPWAT	/GO WAIT FOR FLAG
0415	7410		SKP	/ERROR, SKIP OCCURRED
0416	4472		JMS I NERROR	/CHECK NON-ERROR HANDLER.
0417	4473		JMS I ERROR	/ERROR! DID DECODER WORK
0420	0015		0015	/TST15 ERROR MESSAGE

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0421	0407			
0422	4422			
0423	7000			
0424	4447			
0425	4472			
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0427	1016			
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0431	4420			
0432	4422			
0433	7000			
0434	4450			
0435	4472			
0436	4473			
0437	1417			
0440	0431			
0441	1113			
0442	3045			
0443	4420			
0444	4446			
0445	7410			
0446	4492			
0447	4473			
0450	0020			
0451	0441			
0452	1113			
0453	3045			
0454	4421			
0455	4446			
0456	7410			
0457	4492			
0460	4473			
0461	3021			
0462	0452			
0463	4457			
0464	4420			
0465	4447			
0466	5273			
0467	2041			
0470	5267			

2471	2472	2473	2474	2475	2200T073	9155	PAGE 107
2476	2477	2500	2501	2502	JMS I XPIG04		/GO TO PI, PI EXPECTED
2503	2504	2510	2511	2512	JMS I NERR0R		/CHECK NON-ERROR HANDLER
2513	2514	2515	2516	2517	JMS I ERROR		/ERROR! DID ROST, LAST ?
2520	2521	2522	2523	2524	1422		/TST21 ERROR MESSAGE
2525	2526	2527	2530	2531	TST22		/SCOPE LOOP
2532	2533	2534	2535	2536	/DOES CLSK CLEAR ROST, LINE ?		
2537	2538	2539	2540	2541	TST23,		
2542	2543	2544	2545	2546	JMS I XIOT1		/IOT 6131, CLEI
2547	2548	2549	2550	2551	JMS I XSYNC		/SYNC WITH CLOCK FLAG
2552	2553	2554	2555	2556	JMS I XPIG03		/GO TO PI, NO PI EXPECTED
2557	2558	2559	2560	2561	JMS I NERR0R		/CHECK NON-ERROR HANDLER
2562	2563	2564	2565	2566	JMS I ERROR		/ERROR! DID CLSK CLEAR ROST, FLAG
2567	2568	2569	2570	2571	1023		/TST23 ERROR MESSAGE
2572	2573	2574	2575	2576	TST23		/SCOPE LOOP
2577	2578	2579	2580	2581	/SYNC WITH CLOCK AND		
2582	2583	2584	2585	2586	/CHECK FOR FAST OUTPUT		
2587	2588	2589	2590	2591	TST24,		
2592	2593	2594	2595	2596	JMS I XGTAD		/GET TIME CONSTANTS
2597	2598	2599	2600	2601	0000		/MODIFIED BY TEST
2602	2603	2604	2605	2606	TAD I ,=1		
2607	2608	2609	2610	2611	DCA REGD		
2612	2613	2614	2615	2616	JMS I XIOT1		/IOT 6131, CLEI
2617	2618	2619	2620	2621	JMS I XSYNC		/SYNC WITH CLOCK
2622	2623	2624	2625	2626	JMS I XPIG01		/GO TO PI, NO PI EXPECTED
2627	2628	2629	2630	2631	JMS I NERR0R		/CHECK NON-ERROR HANDLER
2632	2633	2634	2635	2636	JMS I ERROR		/ERROR! CLOCK FREQUENCY FAST
2637	2638	2639	2640	2641	2024		/TST24 ERROR MESSAGE
2642	2643	2644	2645	2646	TST24		/SCOPE LOOP
2647	2648	2649	2650	2651	/SYNC WITH CLOCK AND		
2652	2653	2654	2655	2656	/CHECK FOR SLOW OUTPUT		
2657	2658	2659	2660	2661	TST25,		
2662	2663	2664	2665	2666	TAD K0006		/SETUP FOR SLOW CLOCK
2667	2668	2669	2670	2671	JMS I XGTAD		/GET TIME CONSTANTS
2672	2673	2674	2675	2676	0000		/MODIFIED BY TEST
2677	2678	2679	2680	2681	TAD I ,=1		
2682	2683	2684	2685	2686	DCA REGD		
2687	2688	2689	2690	2691	JMS I XIOT1		/IOT 6131, CLEI
2692	2693	2694	2695	2696	JMS I XSYNC		/SYNC WITH CLOCK
2697	2698	2699	2700	2701	JMS I XPIG02		/GO TO PI, PI EXPECTED
2702	2703	2704	2705	2706	JMS I NERR0R		/CHECK NON-ERROR HANDLER
2707	2708	2709	2710	2711	JMS I ERROR		/ERROR! CLOCK FREQUENCY SLOW
2712	2713	2714	2715	2716	2423		/TST25 ERROR MESSAGE
2717	2718	2719	2720	2721	TST25		/SCOPE LOOP
2722	2723	2724	2725	2726	/CHECK FOR FAST CLOCK AND		
2727	2728	2729	2730	2731	/BAD CLOCK FLAG WITH CLSK,		
2732	2733	2734	2735	2736	TST26,		
2737	2738	2739	2740	2741	JMS I XGTAD		/GET TIME CONSTANTS
2742	2743	2744	2745	2746	0000		/MODIFIED BY TEST
2747	2748	2749	2750	2751	TAD I ,=1		
2752	2753	2754	2755	2756	DCA REGD		
2757	2758	2759	2760	2761	JMS I XSYNC		/SYNC WITH CLOCK

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0541      JMS I X1S2
0542      JMS I X1OTC
0543      JMS I NERROR
0544      JMS I ERROR
0545      2026
0546      TST26

/
/CHECK FOR SLOW CLOCK AND
/BAD CLOCK FLAG WITH CLSK
/
TST27,    TAD K0006
0547      JMS I XGTAD
0550      0000
0551      TAD I 1-1
0552      DCA REGD
0553      JMS I XSYNC
0554      JMS I X1S2
0555      JMS I X1OTC
0556      SKP
0557      JMS I NERROR
0560      JMS I ERROR
0561      2427
0562      TST27
0563      ISZ LOOP
0564      JMP I OVER2A
0565      JMS I XPASS
0566      JMP I OVER2
0567

/DOES 1OT CLZE CHANGE AC?
/CHECK ALL COMBINATIONS.
/
TST30,    TAD REGA
0570      JMS I X1OTC
0571      DCA RECEV
0572      TAD RECEV
0573      JMS I XSNDRV
0574      JMS I NERROR
0575      JMS I ERROR
0576      3030
0577      TST30
0600

/GET AC NUMBER
/1OT 6130, CLZE
/SAVE INPUT FOR ERROR PRINTER
/CHECK SEND AND RECEV REGISTERS
/CHECK NON-ERROR HANDLER
/ERRORICLZE CHANGED AC
/TST30 ERROR MESSAGE
/SCOPE LOOP

/DOES 1OT CLSK CHANGE AC?
/CHECK ALL COMBINATIONS
/
TST31,    TAD REGA
0601      DCA SEND
0602      TAD SEND
0603      JMS I X1OTE
0604      NOP
0605      DCA RECEV
0606      TAD RECEV
0607      JMS I XSNDRV
0610      JMS I NERROR
0611      JMS I ERROR
0612

/GET AC NUMBER
/SAVE OUTPUT FOR ERROR PRINTER
/1OT 6131, CLSK
/SAVE INPUT FOR ERROR PRINTER
/CHECK SEND AND RECEV REGISTERS
/CHECK NON-ERROR HANDLER
/ERRORICLSK CHANGED AC.

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0613	3031	3031		/TST31 ERROR MESSAGE
0614	0601	TST31		/SCOPE LOOP
				/DOES IOT CLOE CHANGE AC?
				/CHECK ALL COMBINATIONS
0615	1040	TST32:		/GET AC NUMBER
0616	4425	JMS I X10TF		/IOT 6132, CLOE
0617	3071	DCA RECEV		/SAVE INPUT FOR ERROR PRINTER
0620	1071	TAD RECEV		/CHECK SEND AND RECEV REGISTERS
0621	4456	JMS I XSNDRV		/CHECK NON-ERROR HANDLER
0622	4472	JMS I NERROR		/ERRORICLOE CHANGED AC
0623	4473	JMS I ERROR		/TST32 ERROR MESSAGE
0624	3032	3032		/SCOPE LOOP
0625	0615	TST32		
				/DOES IOT CLAB CHANGE AC?
				/CHECK ALL COMBINATIONS
0626	1040	TST33:		/GET AC NUMBER
0627	4427	JMS I X10TG		/IOT 6133, CLAB
0630	3071	DCA RECEV		/SAVE INPUT FOR ERROR PRINTER
0631	1071	TAD RECEV		/CHECK SEND AND RECEV REGISTERS
0632	4456	JMS I XSNDRV		/CHECK NON-ERROR HANDLER
0633	4472	JMS I NERROR		/ERRORICLAB CHANGED AC
0634	4473	JMS I ERROR		/TST33 ERROR MESSAGE
0635	3033	3033		/SCOPE LOOP
0636	0626	TST33		
				/DOES CAF CLEAR BUFFER REGISTER?
				/CHECK FOR JAM TO AC, CLBA,
0637	6007	TST34:		/CAF OR CLEAR THE WORLD
0640	7340	CLA CLL CMĀ		/AC TO 7777
0641	4432	JMS I X10TJ		/IOT 6136, CLBA
0642	7650	SNA CLA		/WAS BUFFER ALL 0'S?
0643	4472	JMS I NERROR		/CHECK NON-ERROR HANDLER
0644	4473	JMS I ERROR		/ERRORICAF OR CLBA FAILED.
0645	3434	3434		/TST34 ERROR MESSAGE
0646	0637	TST34		/SCOPE LOOP
				/DOES CAF CLEAR ENABLER REGISTER?
				/CHECK FOR JAM TO AC, CLEN,
0647	6007	TST35:		/CAF OR CLEAR THE WORLD
0650	7340	CLA CLL CMĀ		/AC TO 7777
0651	4430	JMS I X10TH		/IOT 6134, CLEN
0652	7650	SNA CLA		/WAS ENABLER REGISTER ALL 0'S?
0653	4472	JMS I NERROR		/CHECK NON-ERROR HANDLER
0654	4473	JMS I ERROR		/ERRORICAL OR CLEN FAILED.
0655	4435	4435		/TST35 ERROR MESSAGE
0656	0647	TST35		/SCOPE LOOP

0657 6007
0660 7340
0661 4431
0662 7650
0663 4472
0664 4473
0665 5036
0666 0657

/
/DOES CAF CLEAR STATUS REGISTER ?
/CHECK JAM TO AC CLSA
/TST36, 6007
CLA CLL CMA
JMS I XIOTJ
SNA CLA
JMS I NERROR
JMS I ERROR
5036
TST36
/CAF OR THE CLEAR THE WORLD
/AC TO 7777
/IOT 6135, CLSA
/HAS STATUS REGISTER ALL 0'S ?
/CHECK NON-ERROR HANDLER
/CAF OR CLSA FAILED
/TST36 ERROR MESSAGE
/SCOPE LOOP

0667 4427
0670 7340
0671 4432
0672 7650
0673 4472
0674 4473
0675 3437
0676 0667

/DOES AC LOAD BUFFER REGISTER?
/CHECK ALL 0'S TRANSFER
/CHECK JAM TO AC, CLBA
/TST37, JMS I XIOTG
CLA CLL CMA
JMS I XIOTJ
SNA CLA
JMS I NERROR
JMS I ERROR
3437
TST37
/IOT 6133, CLAB
/AC TO 7777
/IOT 6136, CLBA
/HAS BUFFER ALL 0'S?
/CHECK NON-ERROR HANDLER
/ERRORICLAB OR CLBA FAILED
/TST37 ERROR MESSAGE
/SCOPE LOOP

0677 7340
0700 4427
0701 7300
0702 4432
0703 7040
0704 7650
0705 4472
0706 4473
0707 3440
0710 0677

/DOES AC LOAD BUFFER REGISTER ?
/CHECK ALL 1'S TRANSFER
/CHECK JAM TO AC, CLBA
/TST40, CLA CLL CMA
JMS I XIOTG
CLA CLL
JMS I XIOTJ
CMA
SNA CLA
JMS I NERROR
JMS I ERROR
3440
TST40
/AC TO 7777
/IOT 6133, CLAB
/CLEAR THE AC AND LINK
/IOT 6136, CLBA
/COMPLEMENT THE AC
/HAS BUFFER ALL 1'S?
/CHECK NON-ERROR HANDLER
/ERRORICLAB OR CLBA FAILED
/TST40 ERROR MESSAGE
/SCOPE LOOP

0711 1510
0712 4427
0713 7040
0714 4432
0715 4456
0716 4472
0717 4473
0720 3441
0721 0711

/DOES BUFFER SURVIVE PATTERN 2525 ?
/TST41, TAD K2525
JMS I XIOTG
CMA
JMS I XIOTJ
JMS I XSNDV
JMS I NERROR
JMS I ERROR
3441
TST41
/GET AC NUMBER
/IOT 6133, CLAB
/COMPLEMENT AC
/IOT 6136, CLBA
/CHECK SEND AND RECEV REGISTERS
/CHECK NON-ERROR HANDLER
/ERRORI BUFFER OR AC FAILED
/TST41 ERROR MESSAGE
/SCOPE LOOP
/DOES BUFFER SURVIVE PATTERN 5252 ?

0722 1017 /
0723 4427 TST42, /
0724 7040 TAD K5252 /
0725 4432 JMS I X10TG /
0726 4456 CMA /
0727 4492 JMS I X10TJ /
0730 4472 JMS I XSNDRV /
0731 3442 JMS I ERROR /
0732 0722 3442 /
TST42 /
/DOES CAF REALLY CLEAR BUFFER ?
/DO ALL COMBINATIONS

0733 7240 TST43, /
0734 4427 CLA CLA CMA /
0735 6007 JMS I X10TG /
0736 3070 DCA SEND /
0737 7340 CLA CLL CMA /
0740 4432 JMS I X10TJ /
0741 7650 SNA CLA /
0742 4492 JMS I NERROR /
0743 4473 JMS I ERROR /
0744 3443 3443 /
0745 0733 TST43 /
/DOES CAF REALLY CLEAR BUFFER ?
/DO ALL COMBINATIONS

0746 1040 TST44, /
0747 4427 TAD REGA /
0750 6007 JMS I X10TG /
0751 3070 DCA SEND /
0752 7340 CLA CLL CMA /
0753 4432 JMS I X10TJ /
0754 7650 SNA CLA /
0755 4492 JMS I NERROR /
0756 4473 JMS I ERROR /
0757 3444 3444 /
0760 0746 TST44 /
/CHECK AC TO BUFFER REGISTER AND
/BUFFER REGISTER TO AC TRANSFERS.
/CHECK ALL COMBINATIONS.
/CHECK LOAD ON BUFFER REGISTER,

0761 7340 TST45, /
0762 3040 CLA CLL CMA /
0763 1041 DCA REGA /
0764 4427 TAD REGB /
0765 7040 JMS I X10TG /
0766 4432 CMA /
0767 4456 JMS I X10TJ /
0770 7610 JMS I XSNDRV /
0771 3375 SKP CLA /
0772 2041 JMP T45A /
/UPDATE AC NUMBER
/GET AC NUMBER
/IOT 6133, CLXB
/COMPLEMENT AC
/IOT 6136, CLBA
/CHECK SEND AND RECEV REGISTERS
/CHECK NON-ERROR HANDLER
/ERROR! BUFFER OR AC FAILED
/TST42 ERROR MESSAGE
/SCOPE LOOP

0773 5363
0774 4472
0775 4473
0776 3445
0777 0761

JMP T45B
JMS I NERROR
JMS I ERROR
3445
TST45

T45A, /CHECK NON-ERROR HANDLER
/ERROR! AC OR BUFFER FAILED.
/TST45 ERROR MESSAGE
/SCOPE LOOP

/DOES READING BUFFER CHANGE ITS CONTENTS ?

1000 7340
1001 3040
1002 1016
1003 4427
1004 7040
1005 4432
1006 4456
1007 7610
1010 5214
1011 2041
1012 5205
1013 4472
1014 4473
1015 3446
1016 1000

TST46, CLA CLL CMA
DCA REGA
TAD K2525
JMS I XIOTG
CMA
JMS I XIOTJ
JMS I XSNDRV
SKP CLA
JMP T46A
ISZ REGB
JMP T46B
JMS I NERROR
JMS I ERROR
3446
TST46

/AC TO 7777
/GET AC NUMBER
/IOT 6133, CLAB
/COMPLEMENT AC
/IOT 6136, CLBA
/CHECK SEND AND RECEV REGISTERS
/UPDATE COUNTER
/DO 4096 TIMES
/CHECK NON-ERROR HANDLER
/ERROR! BUFFER FAILED
/TST46 ERROR MESSAGE
/SCOPE LOOP

/DOES READING BUFFER CHANGE ITS CONTENTS ?

1017 7340
1020 3040
1021 1017
1022 4427
1023 7040
1024 4432
1025 4456
1026 7610
1027 5233
1030 2041
1031 5224
1032 4472
1033 4473
1034 3447
1035 1017

TST47, CLA CLL CMA
DCA REGA
TAD K2522
JMS I XIOTG
CMA
JMS I XIOTJ
JMS I XSNDRV
SKP CLA
JMP T47A
ISZ REGB
JMP T47B
JMS I NERROR
JMS I ERROR
3447
TST47

/AC TO 7777
/GET AC NUMBER
/IOT 6133, CLAB
/COMPLEMENT AC
/IOT 6136, CLBA
/CHECK SEND AND RECEV REGISTERS
/UPDATE COUNTER
/DO 4096 TIMES
/CHECK NON-ERROR HANDLER
/ERROR! BUFFER FAILED
/TST47 ERROR MESSAGE
/SCOPELOOP

/DOES BUFFER SURVIVE RANDOM PATTERNS ?

1036 7340
1037 3040
1040 4455
1041 4427
1042 7040
1043 4432
1044 4456
1045 7610
1046 5252
1047 2041
1050 5240

TST50, CLA CLL CMA
DCA REGA
JMS I RANDY
JMS I XIOTG
CMA
JMS I XIOTJ
JMS I XSNDRV
SKP CLA
JMP T50A
ISZ REGB
JMP T50B

/AC TO 7777
/GET RANDOM NUMBER
/IOT 6133, CLAB
/COMPLEMENT AC
/IOT 6136, CLBA
/CHECK SEND AND RECEV REGISTERS
/UPDATE COUNTER
/DO 4096 TIMES


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/
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1051 4472 JMS I NERROR /CHECK NON-ERROR HANDLER
1052 4473 JMS I ERROR /ERROR! BUFFER FAILED
1053 3450 /TST50 ERROR MESSAGE
1054 1036 /SCOPE LOOP

/DOES BUFFER SURVIVE FAST TOGGLE ?
/
TST51, TAD REGA /GET AC NUMBER
DCA SEND /SAVE OUTPUT FOR ERROR PRINTER
TAD REGA
JMS I X10T51 /IOT'S 6133 AND 6136
DCA RECEV /SAVE INPUT FOR ERROR PRINTER
TAD RECEV
JMS I XSNDRV /CHECK SEND RECEV REGISTERS
JMS I NERROR /CHECK NON-ERROR HANDLER
JMS I ERROR /ERROR! BUFFER FAILED
3451 /TST51 ERROR MESSAGE
TST51 /SCOPE LOOP

/DOES AC SET ENABLE REGISTER?
/CHECK ALL 1'S TRANSFER.
/CHECK JAM TO AC, CLEN
/
TST52, CLA CLL CMĀ /AC TO 7777
JMS I X10T5 /IOT 6132, CLOE
CMA /COMPLEMENT AC
JMS I X10TH /IOT 6134, CLEN
CMA /COMPLEMENT AC
SNA CLA /WAS ENABLE REGISTER ALL 1'S ?
JMS I NERROR /CHECK NON-ERROR HANDLER
JMS I ERROR /ERROR! CLOE OR CLEN FAILED
4452 /TST52 ERROR MESSAGE
TST52 /SCOPE LOOP

/DOES AC SET ENABLE REGISTER?
/CHECK ALL 0'S TRANSFER.
/
/CHECK FOR JAM TO AC, CLEN
/
TST53, CLA CLL CMĀ /AC TO 7777
JMS I X10T5 /IOT 6132, CLOE
CLA CLL /CLEAR THE AC AND LINK
JMS I X10T51 /IOT 6132, CLOE
JMS I X10TH /IOT 6134, CLEN
CMA /COMPLEMENT THE AC
SNA CLA /WAS ENABLE REGISTER ALL 1'S ?
JMS I NERROR /CHECK NON-ERROR HANDLER
JMS I ERROR /ERROR! CLOE OR CLEN FAILED
4453 /TST53 ERROR MESSAGE
TST53 /SCOPE LOOP

/DOES CAF REALLY CLEAR ENABLE REGISTER?
/
TST54, CLA CLL CMĀ /AC TO 7777
JMS I X10T5 /IOT 6132, CLOE

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1117	6007	6007		/CAF OR CLEAR THE WORLD
1120	3070	DCA SEND		/SAVE OUTPUT FOR ERROR PRINTER
1121	7340	CLA CLL CMA		/AC TO 7777
1122	4430	JMS I X10TH		/IOT 6134, CLEN
1123	7650	SNA CLA		/WAS REGISTER ALL 0'S
1124	4472	JMS I NERROR		/CHECK NON-ERROR HANDLER
1125	4473	JMS I ERROR		/ERROR I CAF, CLOE, OR CLEN FAILED
1126	4454	4454		/TST54 ERROR MESSAGE
1127	1115	TST54		/SCOPE LOOP
/DOES CAF REALLY CLEAR ENABLE REGISTER ?				
/DO ALL COMBINATIONS				
1130	1040	TST55, TAD REGA		/GET AC NUMBER
1131	4426	JMS I X10TF1		/IOT 6132, CLOE
1132	6007	6007		/CAF OR CLEAR THE WORLD
1133	7340	CLA CLL CMA		/AC TO 7777
1134	4430	JMS I X10TH		/IOT 6134, CLEN
1135	7650	SNA CLA		/WAS ENABLE REGISTER ALL 0'S ?
1136	4472	JMS I NERROR		/CHECK NON-ERROR HANDLER
1137	4473	JMS I ERROR		/ERROR I ENABLE REGISTER FAILED
1140	4455	4455		/TST55 ERROR MESSAGE
1141	1130	TST55		/SCOPE LOOP
/DOES ENABLE REGISTER SURVIVE PATTERN 2525 ?				
1142	1016	TST56, TAD K2525		/GET AC NUMBER
1143	4425	JMS I X10TF		/IOT 6132, CLOE
1144	7040	CMA		/COMPLEMENT AC
1145	4430	JMS I X10TH		/IOT 6134, CLEN
1146	4456	JMS I XSNDV		/CHECK SEND AND RECEV REGISTERS
1147	4472	JMS I NERROR		/CHECK NON-ERROR HANDLER
1150	4473	JMS I ERROR		/ERROR I EABLE REGISTER FAILED
1151	4456	4456		/TST56 ERROR MESSAGE
1152	1142	TST56		/SCOPE LOOP
/DOES ENABLE REGISTER SURVIVE PATTERN 5252 ?				
1153	1017	TST57, TAD K5252		/GET AC NUMBER
1154	4425	JMS I X10TF		/IOT 6132, CLOE
1155	7040	CMA		/COMPLEMENT AC
1156	4430	JMS I X10TH		/IOT 6134, CLEN
1157	4456	JMS I XSNDV		/CHECK SEND AND RECEV REGISTERS
1160	4472	JMS I NERROR		/CHECK NON-ERROR HANDLER
1161	4473	JMS I ERROR		/ERROR, ENABLE REGISTER FAILED
1162	4457	4457		/TST57 ERROR MESSAGE
1163	1153	TST57		/SCOPE LOOP
/DOES ENABLE REGISTER SURVIVE PATTERN 2525 ?				
1164	1016	TST60, TAD K2525		/GET AC NUMBER
1165	4425	JMS I X10TF		/IOT 6132, CLOE
1166	7300	CLA CLL		/CLEAR THE AC AND LINK
1167	4426	JMS I X10TF1		/IOT 6132, CLOE
1170	7340	CLA CLL CMA		/AC TO 7777


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V142 V143 4430
1171 4436
1172 4456
1173 4472
1174 4473
1175 4460
1176 1164

JMS I X10TH
JMS I XSNDV
JMS I NERRR
JMS I ERROR
4460
TST60
/SCOPE LOOP

/DOES ENABLE REGISTER SURVIVE PATTERN 5252 ?
/
TST61,
1177 1017
1200 4425
1201 7300
1202 4426
1203 7340
1204 4430
1205 4456
1206 4472
1207 4473
1210 4461
1211 1177

TAD K5252
JMS I X10TF
CLA CLL
JMS I X10TF1
CLA CLL CMA
JMS I X10TH
JMS I XSNDV
JMS I NERRR
JMS I ERROR
4461
TST61

/DOES ENABLE REGISTER SURVIVE COMPLEMENT PATTERN ?
/
TST62,
1212 7340
1213 3070
1214 1016
1215 4426
1216 7040
1217 4426
1220 7300
1221 4430
1222 4456
1223 4472
1224 4473
1225 4462
1226 1212

CLA CLL CMA
DCA SEND
TAD K2525
JMS I X10TF1
CMA
JMS I X10TF1
CLA CLL
JMS I X10TH
JMS I XSNDV
JMS I NERRR
JMS I ERROR
4462
TST62

/AC TO 7777
/SAVE OUTPUT FOR ERROR PRINTER
/GET AC NUMBER
/10T 6132, CLOE
/COMPLEMENT AC
/10T 6132, CLOE
/CLAR THE AC AND LINK
/10T 6134, CLEN
/CHECK SEND RECEV REGISTERS
/CHECK NON-ERROR HANDLER
/ERROR! ENABLE REGISTER FAILED
/10T 6132, CLOE
/SCOPE LOOP

/DOES ENABLE REGISTER SURVIVE COMPLEMENT PATTERN ?
/
TST63,
1227 7340
1230 3070
1231 1017
1232 4426
1233 7340
1234 4426
1235 7300
1236 4430
1237 4456
1240 4472
1241 4473
1242 4463
1243 1227

CLA CLL CMA
DCA SEND
TAD K5252
JMS I X10TF1
CMA
JMS I X10TF1
CLA CLL
JMS I X10TH
JMS I XSNDV
JMS I NERRR
JMS I ERROR
4463
TST63

/AC TO 7777
/SAVE OUTPUT FOR ERROR PRINTER
/GET AC NUMBER
/10T 6132, CLOE
/COMPLEMENT AC
/10T 6132, CLOE
/10T 6134, CLEN
/CHECK SEND AND RECEV REGISTERS
/CHECK NON-ERROR HANDLER
/ERROR! ENABLE REGISTER
/10T 6132, CLOE
/SCOPE LOOP

/DO AC TO ENABLE REGISTER AND
/ENABLE REGISTER TO AC TRANSFERS

```


/CHECK ALL COMBINATIONS

```
1244 1040
1245 4425
1246 7340
1247 4430
1250 4456
1251 4472
1252 4473
1253 4464
1254 1244

TST64,  TAD REGA
        JMS I XIOTF
        CLA CLL CMA
        JMS I XIOTW
        JMS I XSNDRV
        JMS I NERRR
        JMS I ERROR
        4464
        TST64

/GET AC NUMBER
/LOT 6132, CLOE
/AC TO 7777
/LOT 6134, CLEN
/CHECK SEND AND RECEV REGISTERS
/CHECK NON-ERROR HANDLER
/ERROR! AC OR ENABLE REGISTER FAILED.
/TS64 ERROR MESSAGE
/SCOPE LOOP
```

```
/DOES ENABLE REGISTER SURVIVE COMPLEMENT PATTERN?
/DO ALL COMBINATIONS.
```

```
1255 7340
1256 3070
1257 1040
1260 4426
1261 7040
1262 4426
1263 4430
1264 4456
1265 4472
1266 4473
1267 4465
1270 1255

TST65,  CLA CLL CMA
        DCA SEND
        TAD REGA
        JMS I XIOTF1
        CMA
        JMS I XIOTF1
        JMS I XIOTW
        JMS I XSNDRV
        JMS I NERRR
        JMS I ERROR
        4465
        TST65

/AC TO 7777
/SAVE OUTPUT FOR ERROR PRINTER
/GET AC NUMBER
/LOT 6132, CLOE
/COMPLEMENT THE AC
/LOT 6132, CLOE
/LOT 6134, CLEN
/CHECK SEND AND RECEV REGISTERS
/CHECK NON-ERROR HANDLER
/ERROR! AC OR ENABLE REGISTER FAILED.
/TS65 ERROR MESSAGE
/SCOPE LOOP
```

```
/DOES ENABLE REGISTER SURVIVE RANDOM PATTERN ?
```

```
1271 4455
1272 4425
1273 7300
1274 4430
1275 4456
1276 4472
1277 4473
1300 4466
1301 1271

TST66,  JMS I RANDY
        JMS I XIOTF
        CLA CLL
        JMS I XIOTW
        JMS I XSNDRV
        JMS I NERRR
        JMS I ERROR
        4466
        TST66

/GET RANDOM NUMBER
/LOT 6132, CLOE
/CLEAR THE AC AND LINK
/LOT 6134, CLEN
/CHECK SEND AND RECEV REGISTERS
/CHECK NON-ERROR HANDLER
/ERROR! ENABLE REGISTER FAILED
/TS66 ERROR MESSAGE
/SCOPE LOOP
```

```
/DOES ENABLE REGISTER SURVIVE RANDOM COMPLEMENT PATTERN ?
```

```
1302 7340
1303 3070
1304 1040
1305 4426
1306 7040
1307 4426
1310 4430
1311 4456
1312 4472
1313 4473
1314 4467
1315 1302

TST67,  CLA CLL CMA
        DCA SEND
        JMS I RANDY
        JMS I XIOTF1
        CMA
        JMS I XIOTF1
        JMS I XIOTW
        JMS I XSNDRV
        JMS I NERRR
        JMS I ERROR
        4467
        TST67

/AC TO 7777
/SAVE OUTPUT FOR ERROR PRINTER
/GET RANDOM NUMBER
/COMPLEMENT AC
/LOT 6132, CLOE
/LOT 6134, CLEN
/CHECK SEND AND RECEV REGISTERS
/CHECK NON-ERROR HANDLER
/ERROR! ENABLE REGISTER FAILED
/TS67 ERROR MESSAGE
/SCOPE LOOP
```


/DOES READING ENABLE REGISTER CHANGE ITS CONTENTS ?

```

1316 7340  TST70,  CLA CLL CMĀ
1317 3040  DCA REGA
1320 1016  TAD K2525
1321 4425  JMS I XIOTF
1322 7340  CLA CLL CMĀ
1323 4430  JMS I XIOTH
1324 4456  JMS I XSNDRV
1325 7610  SKP CLA
1326 5332  JMP T70A
1327 2041  ISZ REGB
1330 5322  JMP T70B
1331 4472  JMS I NERRR
1332 4473  JMS I ERROR
1333 4470
1334 1316  TST70

```

/DOES READING ENABLE REGISTER CHANGE TIS CONTENTS ?

```

1335 7340  TST71,  CLA CLL CMĀ
1336 3040  DCA REGA
1337 1017  TAD K5252
1340 4425  JMS I XIOTF
1341 7300  CLA CLL
1342 4430  JMS I XIOTH
1343 4456  JMS I XSNDRV
1344 7610  SKP CLA
1345 5351  JMP T71A
1346 2041  ISZ REGB
1347 5341  JMP T71B
1350 4472  JMS I NERRR
1351 4473  JMS I ERROR
1352 4471
1353 1335  TST71

```

/DOES ENABLE REGISTER SURVIVE FAST TOGGLE ?

```

1354 1040  TST72,  TAD REGA
1355 3070  DCA SEND
1356 1040  TAD REGA
1357 4434  JMS I XIOTS
1360 3071  DCA RECEV
1361 1071  TAD RECEV
1362 4450  JMS I XSNDRV
1363 4472  JMS I NERRR
1364 4473  JMS I ERROR
1365 4472  4472
1366 1354  TST72

```

/DOES CLZE CLEAR ENABLE REGISTER?

```

1367 7340  TST73,  CLA CLL CMĀ
1370 4426  JMS I XIOTF1
1371 7340  CLA CLL CMĀ

```

/CHECK SEND AND RECEV REGISTERS

```

/UPDATE COUNTER
/DO 4096 TIMES
/CHECK NON-ERROR HANDLER
/ERROR1 ENABLE REGISTER FAILED
/TST70 ERROR MESSAGE
/SCOPE LOOP

```

/AC TO 7777

```

/GET AC NUMBER
/LOT 6132, CLOE
/CLEAR THE AC AND LINK
/LOT 6134, CLEN
/CHECK SEND RECEV REGISTERS

```

```

/UPDATE COUNTER
/DO 4096 TIMES
/CHECK NON-ERROR HANDLER
/ERROR1 ENABLE REGISTER FAILED
/TST71 ERROR MESSAGE
/SCOPE LOOP

```

```

/GET AC NUMBER
/SAVE OUTPUT FOR ERROR PRINTER

```

```

/LOT'S 6132 AND 0134
/SAVE INPUT FOR ERROR PRINTER
/CHECK SEND RECEV REGISTERS
/CHECK NON-ERROR HANDLER
/ERROR1 ENABLE REGISTER FAILED
/TST72 ERROR MESSAGE
/SCOPE LOOP

```

/AC TO 7777

/LOT 6132, CLOE

10	V142	22-OCT-73	9155	PAGE 1-18
1372	4423	JMS I X10TD	/10T 6130, CLZE	
1373	7300	CLA CLL	/CLEAR THE AC AND LINK	
1374	3070	DCA SEND	/SAVE OUTPUT FOR ERROR PRINTER	
1375	7340	CLA CLL CMA	/AC TO 7777	
1376	4430	JMS I X10TH	/10T 6134, CLEN	
1377	7650	SNA CLA	/WAS REGISTER ALL 0'S	
1400	4472	JMS I NERROR	/CHECK NON-ERROR HANDLER	
1401	4473	JMS I ERROR	/ERRORICLZE OR CLEN FAILED;	
1402	4473	4473	/TST73 ERROR MESSAGE	
1403	1367	TST73	/SCOPE LOOP	
/DOES CLZE CLEAR ENABLE REGISTER?				
1404	7340	CLA CLL CMA	/AC TO 7777	
1405	4425	JMS I X10TP	/10T 6132, CLOE	
1406	7300	CLA CLL		
1407	4423	JMS I X10TD	/10T 6130, CLZE	
1410	7340	CLA CLL CMA	/AC TO 7777	
1411	3070	DCA SEND	/SAVE OUTPUT ERROR PRINTER	
1412	4430	JMS I X10TH	/10T 6134, CLEN	
1413	7040	CMA	/COMPLEMENT AC	
1414	7650	SNA CLA	/WAS REGISTER ALL 0'S?	
1415	4472	JMS I NERROR	/CHECK NON-ERROR HANDLER	
1416	4473	JMS I ERROR	/ERRORICLZE OR CLEN FAILED;	
1417	4474	4474	/TST74 ERROR MESSAGE	
1420	1404	TST74	/SCOPE LOOP	
/DOES CLZE CLEAR ENABLE REGISTER?				
1421	1016	TAD K2525	/10T 6132, CLOE	
1422	4425	JMS I X10TP	/COMPLEMENT THE AC	
1423	7040	CMA	/10T 6130, CLZE	
1424	4423	JMS I X10TD	/COMPLEMENT AC	
1425	7040	CMA	/SAVE OUTPUT FOR ERROR PRINTER	
1426	3070	DCA SEND	/10T 6134, CLEN	
1427	4430	JMS I X10TH	/CHECK SEND AND RECEV REGISTERS	
1430	4456	JMS I XSNDRV	/CHECK NON-ERROR HANDLER	
1431	4472	JMS I NERROR	/ERRORICLZE, CLOE, OR CLEN FAILED	
1432	4473	JMS I ERROR	/TST75 ERROR MESSAGE	
1433	4475	4475	/SCOPE LOOP	
1434	1421	TST75		
/DOES CLZE CLEAR ENABLE REGISTER ?				
1435	1017	TAD K5252	/GET AC NUMBER	
1436	4425	JMS I X10TP	/10T 6132, CLOE	
1437	7040	CMA	/COMPLEMENT AC	
1440	4423	JMS I X10TD	/10T 6130, CLZE	
1441	7040	CMA	/COMPLEMENT AC	
1442	3070	DCA SEND	/SAVE OUTPUT FOR ERROR PRINTER	
1443	4430	JMS I X10TH	/10T 6134, CLEN	
1444	4456	JMS I XSNDRV	/CHECK SEND AND RECEV REGISTERS	
1445	4472	JMS I NERROR	/CHECK NON-ERROR HANDLER	
1446	4473	JMS I ERROR	/ERRORI ENABLE REGISTER FAILED	
1447	4476	4476	/TST76 ERROR MESSAGE	

1450 1435

TST76

/SCOPE LOOP

/DOES CLZE CLEAR ENABLE REGISTER?
/CHECK ALL COMBINATIONS

1451 1040
1452 4425
1453 4423
1454 7300
1455 3070
1456 7340
1457 4430
1460 7650
1461 4472
1462 4473
1463 4477
1464 1451

TST77,
TAD REGA
JMS I XIOTF
JMS I XIOTB
CLA CLL
DCA SEND
CLA CLL CMA
JMS I XIOTW
SNA CLA
JMS I NERRR
JMS I ERROR
4477
TST77
/GET AC NUMBER
/IOT 6132, CLOE
/IOT 6130, CLZE
/CLEAR THE AC AND LINK
/SAVE OUTPUT FOR ERROR PRINTER
/AC TO ALL 1'S
/IOT 6134, CLEN
/HAS REGISTER ALL 0'S?
/CHECK NON-ERROR HANDLER
/ERRORICLZE, CLOE, OR CLEN FAILED
/TST77 ERROR MESSAGE
/SCOPE LOOP

1465 1040
1466 4425
1467 7040
1470 4423
1471 7040
1472 3070
1473 4430
1474 4456
1475 4472
1476 4473
1477 4500
1500 1465

TST100,
TAD REGA
JMS I XIOTF
CMA
JMS I XIOTB
CMA SEND
JMS I XIOTW
JMS I XSNDRV
JMS I NERRR
JMS I ERROR
4500
TST100
/GET AC NUMBER
/IOT 6132, CLOE
/COMPLEMENT THE AC
/IOT 6130, CLZE
/COMPLEMENT THE AC
/SAVE OUTPUT FOR ERROR PRINTER
/IOT 6134, CLEN
/CHECK SEND AND RECEV REGISTERS
/CHECK NON-ERROR HANDLER
/ERRORICLZE, CLOE, OR CLEN FAILED
/TST100 ERROR MESSAGE
/SCOPE LOOP

/DOES CLZE SURVIVE RANDOM PATTERN ?

1501 4455
1502 4425
1503 4423
1504 7300
1505 3070
1506 4430
1507 4450
1510 4472
1511 4473
1512 4501
1513 1501

TST101,
JMS I RANDY
JMS I XIOTF
JMS I XIOTB
CLA CLL
DCA SEND
JMS I XIOTW
JMS I XSNDRV
JMS I NERRR
JMS I ERROR
4501
TST101
/GET RANDOM NUMBER
/IOT 6132, CLOE
/IOT 6130, CLZE
/CLEAR THE AC AND LINK
/SAVE OUTPUT FOR ERROR PRINTER
/IOT 6134, CLEN
/CHECK SEND AND RECEV REGISTERS
/CHECK NON-ERROR HANDLER
/ERRORI ENABLE REGISTER FAILED
/TST101 ERROR MESSAGE
/SCOPE LOOP

/DOES CLZE SURVIVE RANDOM COMPLEMENT PATTERN ?

1514 4455
1515 4425
1516 7040

TST102,
JMS I RANDY
JMS I XIOTF
CMA
/GET RANDOM NUMBER
/IOT 6132, CLOE
/COMPLEMENT AC


```

10 1517 4423 22-OCT-73 9155 PAGE 1-20 /IOT 6130, CLZE
1520 7040 /COMPLEMENT AC
1521 3070 /SAVE OUTPUT FOR ERROR PRINTER
1522 4430 /IOT 6134, CLEN
1523 4456 /CHECK SEND AND RECEV REGISTERS
1524 4472 /CHECK NON-ERROR HANDLER
1525 4473 /ERROR! ENABLE REGISTER FAILED
1526 4502 /TST102 ERROR MESSAGE
1527 1514 /SCOPE LOOP

/DOES CLZE SURVIVE FAST TOGGLE ?
TST103, TAD REGA /GET AC NUMBER
1530 1040 JMS I X10TF /IOT 6132, CLOE
1531 4425 JMS I X10TS3 /IOT'S 6130 AND 6134
1532 4437 DCA RECEV /SAVE INPUT FOR ERROR PRINTER
1533 3071 TAD RECEV
1534 1071 JMS I XSNDRV /CHECK SEND RECEV REGISTERS
1535 4456 JMS I NERRR /CHECK NON-ERROR HANDLER
1536 4472 JMS I ERROR /ERROR! ENABLE REGISTER FAILED
1537 4473 JMS I ERROR /TST103 ERROR MESSAGE
1540 4503 /SCOPE LOOP
1541 1530

/DOES AC TRANSFER TO BUFFER THEN TO COUNTER ?
TST104, JMS I X10TG /IOT 6133, CLAB
1542 4427 CLA CLL CMA /AC TO ALL 1'S
1543 7340 JMS I X10TK /IOT 6137, CLCA
1544 4433 SNA CLA /WAS COUNTER ALL 0'S?
1545 7650 JMS I NERRR /CHECK NON-ERROR HANDLER
1546 4472 JMS I ERROR /ERROR! CLAB OR CLCA FAILED
1547 4473 JMS I ERROR /TST104 ERROR MESSAGE
1550 4104 /SCOPE LOOP
1551 1542

/DOES AC TRANSFER TO BUFFER THEN TO COUNTER?
TST105, CLA CLL CMA /IOT 6133, CLAB
1552 7340 JMS I X10TG /IOT 6137, CLCA
1553 4427 JMS I X10TK /COMPLEMENT THE AC
1554 4433 CMA CLA /WAS COUNTER ALL 1'S?
1555 7040 JMS I NERRR /CHECK NON-ERROR HANDLER
1556 7650 JMS I ERROR /ERROR! CLAB OR CLCA FAILED
1557 4472 JMS : ERROR /TST105 ERROR MESSAGE
1560 4473 /SCOPE LOOP
1561 4104
1562 1552

/DOES COUNTER SURVIVE PATTERN 2525 ?
TST106, TAD K2525 /GET AC NUMBER
1563 1016 JMS I X10TG /IOT 6133, CLAB
1564 4427 CLA CLL /CLEAR THE AC AND LINK
1565 7300 JMS I X10TK /IOT 6137, CLCA
1566 4433 JMS I XSNDRV /CHECK SEND AND RECEV REGISTERS
1567 4456 JMS I NERRR /CHECK NON-ERROR HANDLER
1570 4472

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1571	4473	JMS I ERROR		/ERROR! COUNTER FAILED
1572	4106	4106		/TST106 ERROR MESSAGE
1573	1563	TST106		/SCOPE LOOP
				/DOES COUNTER SURVIVE PATTERN 5252 ?
1574	1017	TST107, TAD K5252		/GET AC NUMBER
1575	4427	JMS I X10TG		/IOT 6133, CLAB
1576	7340	CLA CLL CMA		/AC TO ALL 7777
1577	4433	JMS I X10TK		/IOT 6137, CLCA
1600	4456	JMS I XSNDRV		/CHECK SEND AND RECEV REGISTERS
1601	4472	JMS I NERROR		/CHECK NON-ERROR HANDLER
1602	4473	JMS I ERROR		/ERROR! COUNTER FAILED
1603	4107	4107		/TST107 ERROR MESSAGE
1604	1574	TST107		/SCOPE LOOP
				/DOES AC TRANSFER TO BUFFER THEN TO COUNTER?
				/CHECK ALL COMBINATIONS
1605	1040	TST110, TAD REGA		/IOT 6133, CLAB
1606	4427	JMS I X10TG		/COMPLEMENT THE AC
1607	7040	CMA		/IOT 6137, CLCA
1610	4433	JMS I X10TK		/CHECK SEND AND RECEV REGISTERS
1611	4456	JMS I XSNDRV		/CHECK NON-ERROR HANDLER
1612	4472	JMS I NERROR		/ERROR! CLAB OR CLCA FAILED
1613	4473	JMS I ERROR		/TST110 ERROR MESSAGE
1614	4110	4110		/SCOPE LOOP
1615	1605	TST110		
				/DOES COUNTER SURVIVE FAST TOGGLE?
1616	1040	TST111, TAD REGA		/GET AC NUMBER
1617	3090	DCA SEND		/SAVE OUTPUT FOR ERROR PRINTER
1620	1070	TAD SEND		
1621	4436	JMS I X10TS2		/IOT 6133 AND 6137
1622	3091	DCA RECEV		/SAVE INPUT FOR ERROR PRINTER
1623	1071	TAD RECEV		
1624	4456	JMS I XSNDRV		/CHECK SEND AND RECEV REGISTERS
1625	4472	JMS I NERROR		/CHECK NON-ERROR HANDLER
1626	4473	JMS I ERROR		/ERROR!CLAB OR CLCA FAILED
1627	4111	4111		/TST111 ERROR MESSAGE
1630	1616	TST111		/SCOPE LOOP
				/DOES CAF AFFECT COUNTER ?
1631	1040	TST112, TAD REGA		/GET AC NUMBER
1632	4427	JMS I X10TG		/IOT 6133, CLAB
1633	6007	6007		/CAF OR CLEAR THE WORLD
1634	4433	JMS I X10TK		/IOT 6137, CLCA
1635	4456	JMS I XSNDRV		/CHECK SEND AND RECEV REGISTERS
1636	4472	JMS I NERROR		/CHECK NON-ERROR HANDLER
1637	4473	JMS I ERROR		/ERROR! CLAB OR CLCA FAILED
1640	4112	4112		/TST112 ERROR MESSAGE

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TST112

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/SCOPE LOOP

```
/ DOES READING COUNTER CHANGE ITS CONTENTS?  
/ PATTERN 2525,  
TST113, CLA CLL CMA /AC TO 7777  
DCA REGA  
TAD K2525  
JMS I XIOTG /10T 6133, CLAB  
JMS I XIOTK /10T 6137, CLCA  
JMS I XSNDRV /CHECK SEND AND RECEV REGISTERS  
SKP  
JMP T113A  
ISZ REGB  
JMP T113B  
JMS I NERROR /CHECK NON-ERROR  
JMS I ERROR /ERROR! CLAB OR CLCA FAILED  
JMS I ERROR /TST113 ERROR MESSAGE  
TST113 /SCOPE LOOP  
/ DOES READING COUNTER CHANGE ITS CONTENTS?  
/ PATTERN 5252  
TST114, CLA CLL CMA /AC TO 7777  
DCA REGA  
TAD K2525  
JMS I XIOTG /10T 6133, CLAB  
JMS I XIOTK /10T 6137, CLCA  
JMS I XSNDRV /CHECK SEND AND RECEV REGISTERS  
SKP  
JMP T114A  
ISZ REGB  
JMP T114B  
JMS I NERROR /CHECK NON-ERROR HANDLER  
JMS I ERROR /ERROR! COUNTER FAILED  
JMS I ERROR /TST114 ERROR MESSAGE  
TST114 /SCOPE LOOP  
/ DOES COUNTER SURVIVE RANDOM PATTERN ?  
TST115, JMS I RANDY /GET RANDOM NUMBER  
JMS I XIOTG /10T 6133, CLAB  
CLA CLL CMA  
JMS I XIOTK /10T 6137, CLCA  
JMS I XSNDRV /CHECK SEND AND RECEV REGISTERS  
JMS I NERROR /CHECK NON-ERROR HANDLER  
JMS I ERROR /ERROR! COUNTER FAILED  
JMS I ERROR /TST115 ERROR MESSAGE  
TST115 /SCOPE LOOP  
/ TEST FOR NO INT, ROST:  
TST116, CLA CLL CMA /AC TO 7777
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LINE	ADDRESS	DATA	DISASSEMBLY	COMMENT
1770	1754	TST121	JMS I ERROR	/CHECK NON-ERROR HANDLER
1771	1755	TST121	JMS I ERROR	/ERROR! CAF OR OVERFLOW FAILED
1772	1756	TST121	JMS I ERROR	/TST121 ERROR MESSAGE
1773	1757	TST121	JMS I ERROR	/SCOPE LOOP
1774	1758	TST121	JMS I ERROR	/SCOPE LOOP
1775	1759	TST121	JMS I ERROR	/SCOPE LOOP
1776	1760	TST121	JMS I ERROR	/SCOPE LOOP
1777	1761	TST121	JMS I ERROR	/SCOPE LOOP
1778	1762	TST121	JMS I ERROR	/SCOPE LOOP
1779	1763	TST121	JMS I ERROR	/SCOPE LOOP
1780	1764	TST121	JMS I ERROR	/SCOPE LOOP
1781	1765	TST121	JMS I ERROR	/SCOPE LOOP
1782	1766	TST121	JMS I ERROR	/SCOPE LOOP
1783	1767	TST121	JMS I ERROR	/SCOPE LOOP
1784	1768	TST121	JMS I ERROR	/SCOPE LOOP
1785	1769	TST121	JMS I ERROR	/SCOPE LOOP
1786	1770	TST121	JMS I ERROR	/SCOPE LOOP
1787	1771	TST121	JMS I ERROR	/SCOPE LOOP
1788	1772	TST121	JMS I ERROR	/SCOPE LOOP
1789	1773	TST121	JMS I ERROR	/SCOPE LOOP
1790	1774	TST121	JMS I ERROR	/SCOPE LOOP
1791	1775	TST121	JMS I ERROR	/SCOPE LOOP
1792	1776	TST121	JMS I ERROR	/SCOPE LOOP
1793	1777	TST121	JMS I ERROR	/SCOPE LOOP
1794	1778	TST121	JMS I ERROR	/SCOPE LOOP
1795	1779	TST121	JMS I ERROR	/SCOPE LOOP
1796	1780	TST121	JMS I ERROR	/SCOPE LOOP
1797	1781	TST121	JMS I ERROR	/SCOPE LOOP
1798	1782	TST121	JMS I ERROR	/SCOPE LOOP
1799	1783	TST121	JMS I ERROR	/SCOPE LOOP
1800	1784	TST121	JMS I ERROR	/SCOPE LOOP
1801	1785	TST121	JMS I ERROR	/SCOPE LOOP
1802	1786	TST121	JMS I ERROR	/SCOPE LOOP
1803	1787	TST121	JMS I ERROR	/SCOPE LOOP
1804	1788	TST121	JMS I ERROR	/SCOPE LOOP
1805	1789	TST121	JMS I ERROR	/SCOPE LOOP
1806	1790	TST121	JMS I ERROR	/SCOPE LOOP
1807	1791	TST121	JMS I ERROR	/SCOPE LOOP
1808	1792	TST121	JMS I ERROR	/SCOPE LOOP
1809	1793	TST121	JMS I ERROR	/SCOPE LOOP
1810	1794	TST121	JMS I ERROR	/SCOPE LOOP
1811	1795	TST121	JMS I ERROR	/SCOPE LOOP
1812	1796	TST121	JMS I ERROR	/SCOPE LOOP
1813	1797	TST121	JMS I ERROR	/SCOPE LOOP
1814	1798	TST121	JMS I ERROR	/SCOPE LOOP
1815	1799	TST121	JMS I ERROR	/SCOPE LOOP
1816	1800	TST121	JMS I ERROR	/SCOPE LOOP
1817	1801	TST121	JMS I ERROR	/SCOPE LOOP
1818	1802	TST121	JMS I ERROR	/SCOPE LOOP
1819	1803	TST121	JMS I ERROR	/SCOPE LOOP
1820	1804	TST121	JMS I ERROR	/SCOPE LOOP
1821	1805	TST121	JMS I ERROR	/SCOPE LOOP
1822	1806	TST121	JMS I ERROR	/SCOPE LOOP
1823	1807	TST121	JMS I ERROR	/SCOPE LOOP
1824	1808	TST121	JMS I ERROR	/SCOPE LOOP
1825	1809	TST121	JMS I ERROR	/SCOPE LOOP
1826	1810	TST121	JMS I ERROR	/SCOPE LOOP
1827	1811	TST121	JMS I ERROR	/SCOPE LOOP
1828	1812	TST121	JMS I ERROR	/SCOPE LOOP
1829	1813	TST121	JMS I ERROR	/SCOPE LOOP
1830	1814	TST121	JMS I ERROR	/SCOPE LOOP
1831	1815	TST121	JMS I ERROR	/SCOPE LOOP
1832	1816	TST121	JMS I ERROR	/SCOPE LOOP
1833	1817	TST121	JMS I ERROR	/SCOPE LOOP
1834	1818	TST121	JMS I ERROR	/SCOPE LOOP
1835	1819	TST121	JMS I ERROR	/SCOPE LOOP
1836	1820	TST121	JMS I ERROR	/SCOPE LOOP
1837	1821	TST121	JMS I ERROR	/SCOPE LOOP
1838	1822	TST121	JMS I ERROR	/SCOPE LOOP
1839	1823	TST121	JMS I ERROR	/SCOPE LOOP
1840	1824	TST121	JMS I ERROR	/SCOPE LOOP
1841	1825	TST121	JMS I ERROR	/SCOPE LOOP
1842	1826	TST121	JMS I ERROR	/SCOPE LOOP
1843	1827	TST121	JMS I ERROR	/SCOPE LOOP
1844	1828	TST121	JMS I ERROR	/SCOPE LOOP
1845	1829	TST121	JMS I ERROR	/SCOPE LOOP
1846	1830	TST121	JMS I ERROR	/SCOPE LOOP
1847	1831	TST121	JMS I ERROR	/SCOPE LOOP
1848	1832	TST121	JMS I ERROR	/SCOPE LOOP
1849	1833	TST121	JMS I ERROR	/SCOPE LOOP
1850	1834	TST121	JMS I ERROR	/SCOPE LOOP
1851	1835	TST121	JMS I ERROR	/SCOPE LOOP
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PCAL10	V142	2200CT173	9155	PAGE 1#25
2044	0523	0523	/TST123 ERROR MESSAGE	
2045	2017	TST123	/SCOPE LOOP	
			/DOES CLSK SKIP ON OVERFLOW ?	
			/SKIP EXPECTED, MODE 2, RATE 2#6	
			/	
2046	1131	TST124,	TAD K7773	
2047	3041		DCA REG8	
2050	1143		TAD K2000	
2051	1015		TAD K0200	
2052	3044		DCA REG8	
2053	7340	T124B,	CLA CLL CHA	
2054	4427		JMS I X10TG	
2055	3040		DCA REGA	
2056	1044		TAD REG8	
2057	4425		JMS I X10TF	
2060	2043		ISZ REGD	
2061	5260		JMP I=1	
2062	4424		JMS I X10TE	
2063	5272		JMP T124A	
2064	1013		TAD K0100	
2065	3044		DCA REG8	
2066	6007		6007	
2067	2041		ISZ REG8	
2070	5253		JMP T124B	
2071	4492		JMS I NERR0R	
2072	4493	T124A,	JMS I ERROR	
2073	0524		0524	
2074	2046		TST124	
			/DOES CLSK SKIP ON OVERFLOW ?	
			/SKIP EXPECTED, RATE 2#6, MODE 3	
			/	
2075	1131	TST125,	TAD K7773	
2076	3041		DCA REG8	
2077	1120		TAD K3000	
2100	1015		TAD K0200	
2101	3044		DCA REG8	
2102	7340	T125B,	CLA CLL CHA	
2103	4427		JMS I X10TG	
2104	3040		DCA REGA	
2105	1044		TAD REG8	
2106	4425		JMS I X10TF	
2107	2043		ISZ REGD	
2110	5307		JMP I=1	
2111	4424		JMS I X10TE	
2112	5320		JMP T125A	
2113	1013		TAD K0100	
2114	3044		DCA REG8	
2115	2041		ISZ REG8	
2116	5302		JMP T125B	
2117	4492		JMS I NERR0R	
2120	4493	T125A,	JMS I ERROR	
2121	0525		0525	
2122	2075		TST125	
			/DO RATES 2#6	
			/CHECK NON-ERROR HANDLER	
			/ERROR! CLSK OR OVERFLOW FAILED	
			/TST125 ERROR MESSAGE	
			/SCOPE LOOP	


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PAL10 V142 2200 2152 2202 2203 2204 2205 2206 2207 2210 2211 2212 2213 2214 2215 2216 2217 2220 2221 2222
/
2200CT=73 9155 PAGE 1=27
TST127 /SCOPE LOOP
/DOES CLSA READ OVERFLOW BIT ?
/
TST130, CLA CLL CHA /IOT 6132, CLOE
JMS I X10TG /AC TO 4000
CLA CLL CHL RAR /SAVE OUTPUT FOR ERROR PRINTER
DCA SEND /AC TO 4000
CLA CLL IAC RTR /GET ENABLE
TAD K0600
JMS I X10TF1
JMS I X10TE /IOT 6131, CLSK
JMP I=1
CLA CLL CHA RAR /AC TO 3777
JMS I X10TY /IOT 6135, CLSA
JMS I XSNDV /CHECK SEND AND RECEV REGISTERS
JMS I NERRR /CHECK NON-ERROR HANDLER
JMS I ERROR /ERROR! CLSI OR OVERFLOW FAILED
T130A, S130 /TST130 ERROR MESSAGE
TST130 /SCOPE LOOP
/DOES CLSA CLEAR OVERFLOW FLOP ?
/
TST131, CLA CLL CHA /AC TO 7777
JMS I X10TG /IOT 6133, CLAB
CLA CLL IAC RTR /AC TO 4000
TAD K0600 /GET ENABLE
JMS I X10TF1 /IOT 6132, CLOE
JMS I X10TE /IOT 6131, CLSK
JMP I=1
CLA CLL CHA RAR /AC TO 3777
JMS I X10TY /IOT 6135, CLSA
CLA CLL /CLEAR AC AND LINK
DCA SEND /SAVE OUTPUT FOR ERROR PRINTER
CLA CLL CHA /AC TO 7777
JMS I X10TY /IOT 6135, CLSA
SNA CLA /WAS STATUS REGISTER ALL 0'S ?
JMS I NERRR /CHECK NON-ERROR HANDLER
JMS I ERROR /ERROR! CLSA OR OVERFLOW FAILED
S131 /TST131 ERROR MESSAGE
TST131 /SCOPE LOOP
/DOES CLSA READ OVERFLOW BIT ?
/
TST132, CLA CLL CHA /IOT 6133, CLAB
JMS I X10TG /SAVE OUTPUT FOR ERROR PRINTER
CLA CLL /GET ENABLES
DCA SEND /IOT 6132, CLOE
TAD K0600 /IOT 6131, CLSK
JMS I X10TF1
JMS I X10TE
JMP I=1
CLA CLL CHA RAR /AC TO 3777
JMS I X10TY /IOT 6135, CLSA
SNA CLA /WAS STATUS 0 ?

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10	V142	2200CT-73	9155	PAGE 1-28
2260	4472	JMS I ERROR		/CHECK NON-ERROR HANDLER
2261	4473	JMS I ERROR		/ERROR! CLSA OR STATUS FAILED
2262	5132	5132		/TST132 ERROR MESSAGE
2263	2245	TST132		/SCOPE LOOP
/DOES BUFFER TO COUNTER ON OVERFLOW ?				
/MODE 1, RATE 2				
2264	7340	TST133, CLA CLL CMA		/IOT 6133, CLAB
2265	4427	JMS I XIOTG		
2266	3040	DCA REGA		/AC TO 4000
2267	7313	CLA CLL IAC RTR		
2270	1116	TAD K0400		/GET ENABLES
2271	1144	TAD K1000		/IOT 6132, CLOE
2272	4426	JMS I XIOTF1		/IOT 6131, CLSK
2273	4424	JMS I XIOTE		/WAIT FOR FLAG
2274	5293	JMP I-1		/CLEAR THE AC AND LINK
2275	7300	CLA CLL		/IOT 6137, CLCA
2276	4433	JMS I XIOTR		/FOR TESTING
2277	7040	CMA		/WAS COUNTER ALL 1'S ?
2300	7420	SZA		
2301	5306	JMP T133A		/IOT 6135, CLSA
2302	4431	JMS I XIOTI		
2303	2041	ISZ REGB		/DO TEST 4096 TIMES
2304	5273	JMP T133B		/CHECK NON-ERROR HANDLER
2305	4472	JMS I NERROR		/ERROR! COUNTER FAILED
2306	4473	JMS I ERROR		/TST133 ERROR MESSAGE
2307	4133	4133		/SCOPE LOOP
2310	2264	TST133		
/DOES BUFFER TO COUNTER ON OVERFLOW ?				
/MODE 1, RATE 4				
2311	1017	TST134, TAD K5252		/GET AC NUMBER
2312	4427	JMS I XIOTG		/IOT 6133, CLAB
2313	7340	CLA CLL CMA		/AC TO 7777
2314	3040	DCA REGA		
2315	1144	TAD K1000		/GET ENABLES
2316	1116	TAD K0400		/IOT 6132, CLOE
2317	4426	JMS I XIOTF1		/IOT 6131, CLSK
2320	4424	JMS I XIOTE		/WAIT FOR FLAG
2321	3320	JMP I-1		/AC TO 7777
2322	7340	CLA CLL CMA		/IOT 6137, CLCA
2323	4433	JMS I XIOTR		/CHECK SEND AND RECV REGISTERS
2324	4436	JMS I X0R0V		/CHECK NON-ERROR HANDLER
2325	4492	JMS I NERROR		/ERROR! COUNTER FAILED
2326	4493	JMS I ERROR		/TST134 ERROR MESSAGE
2327	4134	4134		/SCOPE LOOP
2330	2311	TST134		
/DOES BUFFER TO COUNTER ON OVERFLOW ?				
/MODE 1, RATE 4				
2331	1016	TST135, TAD K2525		/GET AC NUMBER
2332	4427	JMS I XIOTG		/IOT 6133, CLAB


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PAGE 1029
22=OCT=73 9155
2333 7340 CLA CLL CMX
2334 3040 DCA REGA
2335 1144 TAD K1000
2336 1116 TAD K0400
2337 4426 JMS I X10TF1
2340 4424 JMS I X10TE
2341 5340 JMP I=1
2342 4433 JMS I X10TK
2343 4496 JMS I XSNDRV
2344 4472 JMS I NERRR
2345 4473 JMS I ERROR
2346 4135 4135
2347 2331 TST135
/DOES BUFFER TO COUNTER ON OVERFLOW ?
/RATE 4, MODE 2
/
TST136, CLA CLL CMX
2350 7340 JMS I X10TG
2351 4427 DCA REGA
2352 3040 DCA SEND
2353 3090 TAD K0400
2354 1116 TAD K2000
2355 1143 JMS I X10TF1
2356 4426 JMS I X10TE
2357 4424 JMP I=1
2360 5397 JMS I X10TK
2361 4433 SNA CLA
2362 7690 JMS I NERRR
2363 4472 JMS I ERROR
2364 4473 JMS I ERROR
2365 4136 4136
2366 2380 TST136
/DOES BUFFER TO COUNTER ON OVERFLOW ?
/MODE 3, RATE 4
/
TST137, CLA CLL CMX
2367 7340 JMS I X10TG
2370 4427 DCA REGA
2371 3040 DCA SEND
2372 3090 TAD K0400
2373 1116 TAD K3000
2374 1120 JMS I X10TF1
2375 4426 JMS I X10TE
2376 4424 JMP I=1
2377 5370 JMS I X10TK
2380 7340 SNA CLA
2401 4433 JMS I NERRR
2402 7690 JMS I ERROR
2403 4472 JMS I ERROR
2404 4473 JMS I ERROR
2405 4137 4137
2406 2367 TST137
/DOES INT. WITHOUT BIT 8 ?

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/GET ENABLES
/IOT 6132, CLOE
/IOT 6131, CLSK
/WAIT FOR OVERFLOW
/IOT 6137, CLCA
/CHECK SEND AND RECEV REGISTERS
/CHECK NON-ERROR HANDLER
/ERROR! COUNTER FAILED
/TST135 ERROR MESSAGE
/SCOPE LOOP
/AC TO 7777
/IOT 6133, CLAB
/SAVE OUTPUT FOR ERROR PRINTER
/GET ENABLES
/IOT 6132, CLOE
/IOT 6131, CLSK
/WAIT FOR FLAG
/IOT 6137, CLCA
/WAS COUNTER ALL 0'S ?
/CHECK NON-ERROR HANDLER
/ERROR! COUNTER FAILED
/TST136 ERROR MESSAGE
/SCOPE LOOP

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/DOES BUFFER TO COUNTER ON OVERFLOW ?
/MODE 3, RATE 4
/
TST137, CLA CLL CMX
2367 7340 JMS I X10TG
2370 4427 DCA REGA
2371 3040 DCA SEND
2372 3090 TAD K0400
2373 1116 TAD K3000
2374 1120 JMS I X10TF1
2375 4426 JMS I X10TE
2376 4424 JMP I=1
2377 5370 JMS I X10TK
2380 7340 SNA CLA
2401 4433 JMS I NERRR
2402 7690 JMS I ERROR
2403 4472 JMS I ERROR
2404 4473 JMS I ERROR
2405 4137 4137
2406 2367 TST137
/DOES INT. WITHOUT BIT 8 ?

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/SCOPE LOOP

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10	V132	22-OCT-73	9155	PAGE 1030	
2407	7340	TST140, CLA CLL CMA			
2410	4427	JMS I X10T6		/IOT 6133, CLAB	
2411	3040	DCA REGA			
2412	7313	CLA CLL IAC RTR		/AC TO 4000	
2413	1007	TAD K0007		/GET ENABLES	
2414	1147	TAD K0000		/IOT 6132, CLOE	
2415	4425	JMS I X10TF		/GO TO PI, NO PI EXPECTED	
2416	4447	JMS I XPIG01		/CHECK NON-ERROR HANDLER	
2417	4492	JMS I NERROR		/ERROR! INT, RQST, OR ENA 0 FAILED	
2420	4473	JMS I ERROR		/TST140 ERROR MESSAGE	
2421	1140	1140		/SCOPE LOOP	
2422	2407	TST140			
		/DOES OVERFLOW CAUSE INT, RQST, ?			
		/RATE 6, MODE 0			
2423	7340	TST141, CLA CLL CMA		/AC TO 7777	
2424	4427	JMS I X10T6		/IOT 6133, CLAB	
2425	7300	CLA CLL		/CLEAR THE AC AND LINK	
2426	1014	TAD K4000			
2427	1142	TAD K0010		/GET RATE + MODE	
2430	1147	TAD K0000		/IOT 6132, CLOE	
2431	4425	JMS I X10TF		/GO TO PI, PI EXPECTED	
2432	4492	JMS I XPIG04		/CHECK NON-ERROR HANDLER	
2433	4473	JMS I NERROR		/ERROR! OVERFLOW OR ENA 0 FAILED	
2434	4493	JMS I ERROR		/TST141 ERROR MESSAGE	
2435	1541	1541		/SCOPE LOOP	
2436	2423	TST141			
		/DOES INT, RQST, WITHOUT ENA 0 ?			
		/RATE 6, MODE 0			
2437	7340	TST142, CLA CLL CMA		/AC TO 7777	
2440	4427	JMS I X10T6		/IOT 6133, CLAB	
2441	7300	CLA CLL		/CLEAR THE AC AND LINK	
2442	1142	TAD K0010		/GET RATE + MODE	
2443	1147	TAD K0000		/IOT 6132, CLOE	
2444	4425	JMS I X10TF		/GO TO PI, NO PI EXPECTED	
2445	4481	JMS I XPIG03		/CHECK NON-ERROR HANDLER	
2446	4492	JMS I NERROR		/ERROR! ENA 0 FAILED	
2447	4473	JMS I ERROR		/TST142 ERROR MESSAGE	
2450	1142	1142		/SCOPE LOOP	
2451	2437	TST142			
		/DOES COUNTER COUNT ?			
		/RATE 6, MODE 0			
2452	7340	TST143, CLA CLL CMA		/AC TO 7777	
2453	3040	DCA REGA			
2454	4427	JMS I X10T6		/IOT 6133, CLAB	
2455	1014	TAD K4000			
2456	1142	TAD K0010		/GET RATE + MODE	
2457	1147	TAD K0000		/IOT 6132, CLOE	
2460	4425	JMS I X10TF		/GO TO PI	
2461	4480	JMS I XPIG02			

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2462	4472	JMS I NERROR		/CHECK NON-ERROR HANDLER
2463	4473	JMS I ERROR		/ERROR! OVERFLOW OR COUNTER FAILED
2464	1543	1543		/TST143 ERROR MESSAGE
2465	2492	TST143		/SCOPE LOOP
/DOES COUNTER COUNT ?				
/RATE 6, MODE 1				
2466	7340	TST144, CLA CMA CLL		/10T 6133, CLAB
2467	3040	DCA REGA		
2470	4427	JMS I X10TG		
2471	1121	TAD K5000		
2472	1142	TAD K0010		
2473	1147	TAD K0600		/GET RATE + MODE
2474	4425	JMS I X10TP		/10T 6132, CLOE
2475	4450	JMS I XPIG02		/GO TO PI
2476	4472	JMS I NERROR		/CHECK NON-ERROR HANDLER
2477	4473	JMS I ERROR		/ERROR! OVERFLOW OR COUNTER FAILED
2500	1544	1544		/TST144 ERROR MESSAGE
2501	2466	TST144		/SCOPE LOOP
/DOES COUNTER COUNT ?				
/RATE 6, MODE 2				
2502	7340	TST145, CLA CLL CMA		/AC TO 7777
2503	3040	DCA REGA		
2504	4427	JMS I X10TG		/10T 6133, CLAB
2505	1117	TAD K6000		
2506	1142	TAD K0010		
2507	1147	TAD K0600		/GET ENABLES
2510	4425	JMS I X10TP		/10T 6132, CLOE
2511	4450	JMS I XPIG02		/GO TO PI, PI EXPECTED
2512	4492	JMS I NERROR		/CHECK NON-ERROR HANDLER
2513	4473	JMS I ERROR		/ERROR! OVERFLOW OR COUNTER FAILED
2514	1545	1545		/TST145 ERROR MESSAGE
2515	2502	TST145		/SCOPE LOOP
/DOES COUNTER COUNT ?				
/RATE 6, MODE 3				
2516	7340	TST146, CLA CLL CMA		/AC TO 7777
2517	3040	DCA REGA		
2520	4427	JMS I X10TG		/10T 6133, CLAB
2521	1141	TAD K7000		
2522	1142	TAD K0010		
2523	1147	TAD K0600		/GET ENABLES
2524	4425	JMS I X10TP		/10T 6132, CLOE
2525	4450	JMS I XPIG02		/GO TO PI, PI EXPECTED
2526	4492	JMS I NERROR		/CHECK NON-ERROR HANDLER
2527	4473	JMS I ERROR		/ERROR! COUNTER OR MODE 3 FAILED
2530	1546	1546		/TST146 ERROR MESSAGE
2531	2516	TST146		/SCOPE LOOP
/DOES OVERFLOW CAUSE ROST, ?				
/RATE 206, MODE 0				

2532 1131
2533 3041
2534 1014
2535 1142
2536 1015
2537 3044
2540 7340
2541 4427
2542 3040
2543 1044
2544 4425
2545 4447
2546 5355
2547 6007
2550 1013
2551 1044
2552 2041
2553 5337
2554 4492
2555 4493
2556 1547
2557 2552

TST147, TAD K7773
DCA REG8
TAD K4000
TAD K0010
TAD K0200
DCA REG8
CLA CLL CH1
JMS I XIOT6
DCA REG8
TAD REG8
JMS I XIOT6
JMS I XPIG01
JMP T147A
6007
TAD K0100
TAD REG8
IS2 REG8
JMP T147B
JMS I NERROR
JMS I ERROR
T147A, 1547
TST147

/SET UP ENABLES
/AC TO 7777
/IOT 6133, CLAB
/GET ENABLES
/IOT 6132, CLOE
/GO TO PI, PI EXPECTED
/CAP OR CLEAR THE WORLD

/DO RATES 2=6
/CHECK NON-ERROR HANDLER
/ERROR! OVERFLOW OR MODE FAILED
/TST147 ERROR MESSAGE
/SCOPE LOOP

/DOES OVERFLOW CAUSE ROST, ?
/RATE 2=6, MODE 1
/TST150, TAD K7773

2560 1131
2561 3041
2562 1181
2563 1142
2564 1015
2565 3044
2566 7340
2567 4487
2570 3040
2571 1044
2572 4425
2573 4447
2574 5573
2575 6007
2576 1013
2577 1044
2600 2041
2601 5337
2602 4492
2603 4493
2604 1550
2605 2560

TAD K5000
TAD K0010
TAD K0200
DCA REG8
CLA CLL CH1
JMS I XIOT6
DCA REG8
TAD REG8
JMS I XIOT6
JMS I XPIG01
JMP I XCRS3
6007
TAD K0100
TAD REG8
IS2 REG8
JMS I XCRS3
JMS I NERROR
JMS I ERROR
T150A, 1550
TST150

/MAKE ENABLES
/AC TO 7777
/IOT 6133, CLAB
/GET ENABLES
/IOT 6132, CLOE
/GO TO PI, PI EXPECTED
/CAP OR CLEAR THE WORLD

/CHECK NON-ERROR HANDLER
/ERROR! OVERFLOW OR MODE FAILED
/TST150 ERROR MESSAGE
/SCOPE LOOP

/DOES OVERFLOW CAUSE ROST, ?
/RATE 2=6, MODE 2
/TST151, TAD K7773

2606 1131
2607 3041

DCA REG8

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2610	1117	TAD K6000	
2611	1142	TAD K0010	
2612	1015	TAD K0200	
2613	3044	DCA REG	/MAKE ENABLES
2614	7340	CLA CLL CHA	/AC TO 7777
2615	4427	JMS I X1070	/IOT 6133; CLAB
2616	3040	DCA REG	
2617	1044	TAD REG	/GET ENABLES
2620	4425	JMS I X1070	/IOT 6132; CLOE
2621	4447	JMS I XPIG01	/GO TO PI, PI EXPECTED
2622	5231	JMP T151A	
2623	6007	6007	/CAP OR CLEAR THE WORLD
2624	1013	TAD K0100	
2625	1044	TAD REG	
2626	2041	ISZ REG	
2627	5213	JMP T151B	
2630	4492	JMS I NERROR	/CHECK NON-ERROR HANDLER
2631	4493	JMS I ERROR	/ERROR! OVERFLOW OR MODE FAILED
2632	1551	1551	/TST151 ERROR MESSAGE
2633	2606	TST151	/SCOPE LOOP
		/DOES OVERFLOW CAUSE ROST; ?	
		/RATE 206; MODE 3	
		/	
2634	1131	TST152; TAD K7773	
2635	3041	DCA REG	/MAKE ENABLES
2636	1141	TAD K7000	
2637	1142	TAD K0010	
2640	1015	TAD K0200	
2641	3044	DCA REG	/AC TO 7777
2642	7340	CLA CLL CHA	/IOT 6133; CLAB
2643	4427	JMS I X1070	
2644	3040	DCA REG	
2645	1044	TAD REG	/GET ENABLES
2646	4425	JMS I X1070	/IOT 6132; CLOE
2647	4447	JMS I XPIG01	/GO TO PI; PI EXPECTED
2650	5237	JMP T152A	
2651	6007	6007	/CAP OR CLEAR THE WORLD
2652	1013	TAD K0100	
2653	1044	TAD REG	
2654	2041	ISZ REG	
2655	5241	JMP T152B	/DO RATES 206
2656	4492	JMS I NERROR	/CHECK NON-ERROR HANDLER
2657	4493	JMS I ERROR	/ERROR! OVERFLOW OR MODE FAILED
2660	1552	1552	/TST152 ERROR MESSAGE
2661	2634	TST152	/SCOPE LOOP
		/DOES OVERFLOW CAUSE ROST; ?	
		/RATE 007; MODE 1; DISABLE BIT 7	
		/	
2662	1122	TST153; TAD K7770	
2663	3041	DCA REG	
2664	1121	TAD K5000	
2665	1142	TAD K0010	
2666	1140	TAD K0020	

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2667	3044	T153B, DCA REG		/MAKE ENABLES
2670	7340	CLA CLL CMA		/AC TO 7777
2671	4427	JMS I XIOTG		/IOT 6133, CLAB
2672	3040	DCA REG		/GET ENABLES
2673	1044	TAD REG		/IOT 6132, CLOE
2674	4425	JMS I XIOTF		/GO TO PI, NO PI EXPECTED
2675	4450	JMS I XPIG02		/CAP OR CLEAR THE WORLD
2676	5305	JMP T153A		
2677	6007	6007		
2700	1013	TAD K0100		
2701	1044	TAD REG		
2702	2041	IS2 REG		
2703	5267	JMP T153B		
2704	4472	JMS I NERROR		/DO RATE 0=7
2705	4473	JMS I ERROR		/CHECK NON=ERROR HANDLER
2706	1153	JMS I ERROR		/ERROR! OVERFLOW OR CLR ENA FAILED
2707	2662	TST153		/TST153 ERROR MESSAGE
		TST153		/SCOPE LOOP
		/DOES OVERFLOW CAUSE RQST, ?		
		/RATE 0=7, MODE 2, DISABLE INT, RQST, BIT		
		TST154, TAD K7770		
2710	1122	DCA REG		/MAKE ENABLES
2711	3041	TAD K6000		/AC TO 7777
2712	1117	TAD K0010		/IOT 6133, CLAB
2713	1142	TAD K0020		/GET ENABLES
2714	1140	DCA REG		/IOT 6132, CLOE
2715	3044	CLA CLL CMA		/GO TO PI, NO PI EXPECTED
2716	7340	JMS I XIOTG		/CAP OR CLEAR THE WORLD
2717	4427	DCA REG		
2720	3040	TAD REG		
2721	1044	JMS I XIOTF		
2722	4425	JMS I XPIG02		
2723	4450	JMP T154A		
2724	5333	6007		
2725	6007	TAD K0100		
2726	1013	TAD REG		
2727	1044	IS2 REG		
2730	2041	JMP T154B		
2731	5315	JMS I NERROR		/DO RATE 0=7
2732	4472	JMS I ERROR		/CHECK NON=ERROR HANDLER
2733	4473	JMS I ERROR		/ERROR! OVERFLOW OR CLR PNA FAILED
2734	1154	TST154		/TST154 ERROR MESSAGE
2735	2710	TST154		/SCOPE LOOP
		/DOES OVERFLOW CAUSE INT, RQST, ?		
		/MODE 0, RATE 6		
		TST155, CLA CLL CMA		
2736	7340	JMS I XIOTG		/AC TO 7777
2737	4427	CLA CLL CML RAR		/IOT 6133, CLAB
2740	7330	TAD K0000		/AC TO 4000
2741	1147	JMS I XIOTF		/GET ENABLES
2742	1142	JMS I XPIG04		/IOT 6132, CLOE
2743	4425	JMS I ERROR		/GO TO PI, PI EXPECTED
2744	4452			/CHECK NON=ERROR HANDLER
2745	4492			

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2746	4473	JMS I ERROR		/ERROR! OVERFLOW OR COUNTER FAILED
2747	1555	1555		/TST155 ERROR MESSAGE
2750	2736	TST155		/SCOPE LOOP
		/DOES CLSK SKIP THEN INTERRUPT ?		
		/RATE 6, MODE 0		
2751	7340	TST156, CLA CLL CMA		/AC TO 7777
2752	4427	JMS I XIOTG		/IOT 6133, CLAB
2753	7330	CLA CLL CML RAR		
2754	1142	TAD K0010		/MAKE ENABLES
2755	1147	TAD K0600		/IOT 6132, CLOE
2756	4425	JMS I XIOTF		/IOT 6131, CLSK
2757	4424	JMS I XIOTE		/WAIT FOR OVERFLOW
2760	5357	JMP I=1		/GO TO PI, PI EXPECTED
2761	4482	JMS I XPIG04		/CHECK NON-ERROR HANDLER
2762	4492	JMS I NERROR		/ERROR! CLSK OR PI FAILED
2763	4473	JMS I ERROR		/TST156 ERROR MESSAGE
2764	1556	1556		/SCOPE LOOP
2765	2751	TST156		
		/CHECK FOR NO INT, RGSY:		
		/MODE 0, RATE 0, DISABLE WITH CLSA		
2766	7340	TST157, CLA CLL CMA		/AC TO 7777
2767	4427	JMS I XIOTG		/IOT 6133, CLAB
2770	7330	CLA CLL CML RAR		/AC TO 4000
2771	1147	TAD K0600		
2772	1142	TAD K0010		/IOT 6132, CLOE
2773	4425	JMS I XIOTF		/IOT 6131, CLSK
2774	4424	JMS I XIOTE		/WAIT FOR OVERFLOW
2775	5374	JMP I=1		/IOT 6135, CLSA
2776	4431	JMS I XIOTF		/GO TO PI, NO PI EXPECTED
2777	4451	JMS I XPIG03		/CHECK NON-ERROR HANDLER
3000	4492	JMS I NERROR		/ERROR! INT, RGSY, FAILED
3001	4473	JMS I ERROR		/TST157 ERROR MESSAGE
3002	1157	1157		/SCOPE LOOP
3003	2766	TST157		
		/DOES CLOCK FREQUENCY TIME OUT ?		
		/RATE 2, MODE 0		
3004	7340	TST160, CLA CLL CMA		/AC TO 7777
3005	3040	DCA REGA		
3006	1151	TAD KTA		
3007	3076	DCA KREGC		/IOT 6133, CLAB
3010	4427	JMS I XIOTG		
3011	1014	TAD K4000		/MAKE ENABLES
3012	1142	TAD K0010		/IOT 6132, CLOE
3013	1015	TAD K0200		
3014	4425	JMS I XIOTF		/CHECK NON-ERROR HANDLER
3015	4453	JMS I XPIG05		/ERROR! CLOCK FREQUENCY FAST
3016	7610	SKP CLA		
3017	4472	JMS I NERROR		
3020	4473	JMS I ERROR		

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3021	2160	2160		/TST160 ERROR MESSAGE
3022	3004	TST160		/SCOPE LOOP
/DOES CLOCK FREQUENCY TIME OUT ?				
/RATE 2, MODE 0				
3023	7340	TST161, CLA CLL CMI		/AC TO 7777
3024	3040	DCA REGA		
3025	1152	TAD KTA1		
3026	3076	DCA KREGC		
3027	4427	JMS I XIOT6		/IOT 6133, CLAB
3030	1014	TAD K4000		
3031	1142	TAD K0010		
3032	1015	TAD K0200		/MAKE ENABLES
3033	4425	JMS I XIOT6		/IOT 6132, CLOE
3034	4453	JMS I XPIG05		/CHECK NON-ERROR HANDLER
3035	4472	JMS I NERROR		/ERROR! CLOCK FREQUENCY SLOW
3036	4473	JMS I ERROR		/TST161 ERROR MESSAGE
3037	2561	2561		/SCOPE LOOP
3040	3023	TST161		
/DOES CLOCK FREQUENCY TIME OUT ?				
/RATE 3, MODE 0				
3041	7340	TST162, CLA CLL CMI		/AC TO 7777
3042	3040	DCA REGA		
3043	1153	TAD KTB		
3044	3076	DCA KREGC		
3045	4427	JMS I XIOT6		/IOT 6133, CLAB
3046	1014	TAD K4000		
3047	1142	TAD K0010		
3050	1145	TAD K0300		/MAKE ENABLES
3051	4425	JMS I XIOT6		/IOT 6132, CLOE
3052	4453	JMS I XPIG05		/CHECK NON-ERROR HANDLER
3053	7610	SKP CLA		/ERROR! CLOCK FREQUENCY FAST
3054	4472	JMS I NERROR		/TST162 ERROR MESSAGE
3055	4473	JMS I ERROR		/SCOPE LOOP
3056	2162	2162		
3057	3041	TST162		
/DOES CLOCK FREQUENCY TIME OUT ?				
/RATE 3, MODE 0				
3060	7340	TST163, CLA CLL CMI		/AC TO 7777
3061	3040	DCA REGA		
3062	1154	TAD KTB1		
3063	3076	DCA KREGC		
3064	4427	JMS I XIOT6		/IOT 6133, CLAB
3065	1014	TAD K4000		
3066	1142	TAD K0010		
3067	1145	TAD K0300		/MAKE ENABLES
3070	4425	JMS I XIOT6		/IOT 6132, CLOE
3071	4453	JMS I XPIG05		/CHECK NON-ERROR HANDLER
3072	4472	JMS I NERROR		/ERROR! CLOCK FREQUENCY SLOW
3073	4473	JMS I ERROR		

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3074	2563	2563		/TST163 ERROR MESSAGE
3075	3060	TST163		/SCOPE LOOP
				/DOES CLOCK FREQUENCY TIME OUT ?
				/RATE 4, MODE 0
3076	7340	TST164, CLA CLL CHA		/AC TO 7777
3077	3040	DCA REGA		
3100	1155	TAD KTC		
3101	3076	DCA KREGC		
3102	1156	TAD KTC1		
3103	3043	DCA REGD		
3104	4427	JMS I X10TG		/SET TIMER FOR 10000 CPS CLOCK
3105	1014	TAD K4000		/IOT 6133, CLAB
3106	1142	TAD K0010		
3107	1116	TAD K0400		/MAKE ENABLES
3110	4425	JMS I X10TF		/IOT 6132, CLOE
3111	4493	JMS I XPIG05		
3112	7610	SKP CLA		/CHECK NON-ERROR HANDLER
3113	4472	JMS I NERROR		/ERROR! CLOCK FREQUENCY FAST
3114	4473	JMS I ERROR		/TST164 ERROR MESSAGE
3115	2164	2164		/SCOPE LOOP
3116	3076	TST164		
				/DOES CLOCK FREQUENCY TIME OUT ?
				/RATE 4, MODE 0
3117	7340	TST165, CLA CLL CHA		/AC TO 7777
3120	3040	DCA REGA		
3121	1155	TAD KTC		
3122	3076	DCA KREGC		
3123	1157	TAD KTC2		
3124	3043	DCA REGD		/SET TIMER FOR 10000 CLOCK
3125	4427	JMS I X10TG		/IOT 6133, CLAB
3126	1014	TAD K4000		
3127	1142	TAD K0010		/MAKE ENABLES
3130	1116	TAD K0400		/IOT 6132, CLOE
3131	4425	JMS I X10TF		
3132	4493	JMS I XPIG05		/CHECK NON-ERROR HANDLER
3133	4472	JMS I NERROR		/ERROR! CLOCK FREQUENCY SLOW
3134	4473	JMS I ERROR		/TST165 ERROR MESSAGE
3135	2565	2565		/SCOPE LOOP
3136	3117	TST165		
				/DOES CLOCK FREQUENCY TIME OUT ?
				/RATE 5, MODE 0
3137	7340	TST166, CLA CLL CHA		/AC TO 7777
3140	3040	DCA REGA		
3141	7350	CLA CLL CHA RAR		
3142	4427	JMS I X10TG		/IOT 6133, CLAB
3143	7300	CLA CLL		/CLEAR THE AC AND LINK
3144	1160	TAD KTD		
3145	3043	DCA REGD		/SET TIMER FOR 10000 CPS CLOCK
3146	1014	TAD K4000		

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3147	1142	TAD K0010		/MAKE ENABLES
3150	1146	TAD K0500		/IOT 6132, CLOE
3151	4425	JMS I X107F		
3152	4447	JMS I XPIG01		/CHECK NON-ERROR HANDLER
3153	4472	JMS I NERR0R		/ERROR! CLOCK FREQUENCY PAST
3154	4473	JMS I ERROR		/TST166 ERROR MESSAGE
3155	2166	2166		/SCOPE LOOP
3156	3137	TST166		
		/DOES CLOCK FREQUENCY TIME OUT ?		
		/RATE 5, MODE 0		
		TST167, CLA CLL CMA		/AC TO 7777
3157	7340	DCA REGA		
3160	3040	CLA CLL CMA RAR		
3161	7350	JMS I X107G		/IOT 6133, CLAB
3162	4427	CLA CLL		/CLEAR THE AC AND LINK
3163	7300	TAD KTD1		
3164	1161	DCA REGD		/SET TIMER FOR 100000 CPS CLOCK
3165	3043	TAD K4000		
3166	1014	TAD K0010		/MAKE ENABLES
3167	1142	TAD K0500		/IOT 6132, CLOE
3170	1146	JMS I X107F		/CHECK NON-ERROR HANDLER
3171	4425	JMS I XPIG02		/ERROR! CLOCK FREQUENCY SLOW
3172	4450	JMS I NERR0R		/TST167 ERROR MESSAGE
3173	4472	JMS I ERROR		/SCOPE LOOP
3174	4473	2567		
3175	2567	TST167		
3176	3137			
		/DOES CLOCK FREQUENCY TIME OUT ?		
		/RATE 6, MODE 0		
		TST170, CLA CLL CMA		/AC TO 7777
3177	7340	DCA REGA		
3200	3040	TAD KTE		
3201	1162	DCA REGD		/SET TIMER FOR 100000 CPS CLOCK
3202	3043	JMS I X107G		/IOT 6133, CLAB
3203	4427	TAD K4000		
3204	1014	TAD K0010		/MAKE ENABLES
3205	1142	TAD K0600		/IOT 6132, CLOE
3206	1147	JMS I X107F		/CHECK NON-ERROR HANDLER
3207	4425	JMS I XPIG01		/ERROR! CLOCK FREQUENCY PAST
3210	4447	JMS I NERR0R		/TST170 ERROR MESSAGE
3211	4472	JMS I ERROR		/SCOPE LOOP
3212	4473	2170		
3213	2156	TST170		
3214	3137			
		/DOES CLOCK FREQUENCY TIME OUT ?		
		/RATE 6, MODE 0		
		TST171, CLA CLL CMA		/AC TO 7777
3215	7340	DCA REGA		
3216	3040	TAD KTE1		
3217	1163	DCA REGD		/SET TIMER FOR 1000000 CPS CLOCK
3220	3043	JMS I X107G		/IOT 6133, CLAB
3221	4427			

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3223	1014	TAD K4000		
3223	1142	TAD K0010		
3224	1147	TAD K0600		/MAKE ENABLES
3225	4425	JMS I X101F		/IOT 6132, CLOE
3226	4450	JMS I XPI002		/CHECK NON-ERROR HANDLER
3227	4472	JMS I NERROR		/ERROR! CLOCK FREQUENCY SLOW
3230	4473	JMS I ERROR		/TST171 ERROR MESSAGE
3231	2571	TST171		/SCOPE LOOP
3232	3215			
/DOES COUNTER REALLY COUNT ?				
/RATE 2, MODE 0				
3233	7340	TST172, CLA CLL CHA		/AC TO 7777
3234	4427	JMS I X101G		/IOT 6133, CLAB
3235	3040	DCA REGA		/GET RATE + MODE
3236	1015	TAD K0200		/IOT 6132, CLOE
3237	4426	JMS I X101F1		/CLEAR THE AC AND LINK
3240	7300	CLA CLL		/SAVE OUTPUT FOR ERROR PRINTER
3241	3042	DCA REGC		/IOT 6137, CLCA
3242	1041	TAD REGB		/COMPARE TO THIS REGISTER
3243	3030	DCA SEND		/ARE THEY THE SAME YET ?
3244	4433	JMS I X101R		/YES, TEST NEXT NUMBER
3245	7041	CIA		/WAIT ABOUT 15 MS FOR REGISTER
3246	1041	TAD REGB		/NUMBER NOT FOUND
3247	7650	SNA CLA		/UPDATE COMPARE REGISTER
3250	5254	JMP T172A		/TEST FOR NEXT COUNTER PULSE
3251	2042	ISE REGC		/CHECK NON-ERROR HANDLER
3252	5244	JMP T172B		/ERROR! COUNTER FAILED
3253	5257	JMP T172A1		/TST172 ERROR MESSAGE
3254	2041	ISE REGB		/SCOPE LOOP
3255	5240	ISE REGC		
3256	4472	JMS I NERROR		
3257	4473	JMS I ERROR		
3260	4172	TST172		
3261	3233			
/DOES COUNTER REALLY COUNT ?				
/RATE 3, MODE 0				
3262	7340	TST173, CLA CLL CHA		/AC TO 7777
3263	4427	JMS I X101G		/IOT 6133, CLAB
3264	3040	DCA REGA		/GET RATE + MODE
3265	1145	TAD K0300		/IOT 6132, CLOE
3266	4426	JMS I X101F1		/CLEAR THE AC AND LINK
3267	7300	CLA CLL		/SAVE OUTPUT FOR ERROR PRINTER
3270	3042	DCA REGC		/IOT 6137, CLCA
3271	1041	TAD REGB		/COMPARE TO THIS REGISTER
3272	3070	DCA SEND		/ARE THEY THE SAME YET ?
3273	4433	JMS I X101R		/YES, TEST NEXT NUMBER
3274	7041	CIA		
3275	1041	TAD REGB		
3276	7650	SNA CLA		
3277	5303	JMP T173A		
3300	2042	ISE REGC		

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3301	JMP T173B		/WAIT ABOUT 15 MS FOR REGISTER
3302	JMP T173A1		/NUMBER NOT FOUND
3303	ISE REGB		/UPDATE COMPARE REGISTER
3304	JMP T173B1		/TEST FOR NEXT COUNTER PULSE
3305	JMS I NERRR		/CHECK NON-ERROR HANDLER
3306	JMS I ERROR		/ERROR! COUNTER FAILED
3307	JMS I 4173		/TST173 ERROR MESSAGE
3310	TST173		/SCOPE LOOP
			/DOES COUNTER REALLY COUNT ?
			/RATE 2, MODE 1
3311	TST174,	CLA CLL CHA	/AC TO 7777
3312		JMS I XIOTG	/IOT 6133, CLAB
3313		DCA REGA	
3314		TAD K0200	/GET RATE + MODE
3315		TAD K1000	/IOT 6132, CLOE
3316		JMS I XIOTF1	/IOT 6131, CLSK
3317		JMS I XIOTE	/CLEAR THE AC AND LINK
3320		JMP I 1	/IOT 6133, CLAB
3321		CLA CLL	
3322		JMS I XIOTG	/SAVE OUTPUT FOR ERROR PRINTER
3323		DCA REGC	/IOT 6137, CLCA
3324		TAD REGB	/COMPARE TO THIS REGISTER
3325		SNA CLA	/ARE THEY THE SAME YET ?
3326		JMP T174A	/YES, TEST NEXT NUMBER
3327		ISE REGC	
3330		JMP T174B	/WAIT ABOUT 15 MS FOR REGISTER
3331		JMP T174A1	/NUMBER NOT FOUND
3332		ISE REGB	/UPDATE COMPARE REGISTER
3333		JMP T174B1	/TEST FOR NEXT COUNTER PULSE
3334		JMS I NERRR	/CHECK NON-ERROR HANDLER
3335		JMS I ERROR	/ERROR! COUNTER FAILED
3336		JMS I 4174	/TST174 ERROR MESSAGE
3337		TST174	/SCOPE LOOP
3340		/DOES COUNTER REALLY COUNT ?	
3341		/RATE 4, MODE 1	
3342			/AC TO 7777
3343			/IOT 6133, CLAB
3344		TST175,	/GET RATE + MODE
3345		CLA CLL CHA	/IOT 6132, CLOE
3346		JMS I XIOTG	/IOT 6131, CLSK
3347		DCA REGA	/CLEAR THE AC AND LINK
3350		TAD K0400	/IOT 6133, CLAB
3351		TAD K1000	
3352		JMS I XIOTF1	
3353		JMS I XIOTE	
3354		JMP I 1	
3355		CLA CLL	
3356		JMS I XIOTG	
3357		DCA REGC	
		TAD REGB	

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3360	3070	DCA SEND		/SAVE OUTPUT FOR ERROR PRINTER
3361	4433	JMS I X10TR		/IOT 6137, CLCA
3362	7041	CIA		
3363	1041	TAD REG8		/COMPARE TO THIS REGISTER
3364	7650	SNA CLA		/ARE THEY THE SAME YET ?
3365	5371	JMP T175A		/YES, TEST NEXT NUMBER
3366	2042	ISE REGC		
3367	5361	JMP T175B		/WAIT ABOUT 15 MS FOR REGISTER
3370	5374	JMP T175A1		/NUMBER NOT FOUND
3371	2041	ISE REG8		/UPDATE COMPARE REGISTER
3372	5356	JMP T175B1		/TEST FOR NEXT COUNTER PULSE
3373	4472	JMS I NERROR		/CHECK NON-ERROR HANDLER
3374	4473	JMS I ERROR		/ERROR! COUNTER FAILED
3375	4175	JMS I ERROR		/TST175 ERROR MESSAGE
3376	5344	TST175		/SCOPE LOOP
		/DOES COUNTER REALLY COUNT ?		
		/RATE 2, MODE 2		
		TST176:		
3377	7340	CLA CLL CMA		/AC TO 7777
3400	4427	JMS I X10TR		/IOT 6133, CLAB
3401	3040	DCA REGA		
3402	1015	TAD K0200		/GET RATE + MODE
3403	1143	TAD K0200		/IOT 6132, CLOC
3404	4426	JMS I X10TP1		/CLEAR THE AC AND LINK
3405	7300	CLA CLL		
3406	3042	DCA REGC		
3407	1041	TAD REG8		
3410	3070	DCA SEND		/SAVE OUTPUT FOR ERROR PRINTER
3411	4433	JMS I X10TR		/IOT 6137, CLCA
3412	7041	CIA		
3413	1041	TAD REG8		/COMPARE TO THIS REGISTER
3414	7650	SNA CLA		/ARE THEY THE SAME YET ?
3415	5221	JMP T176A		/YES, TEST NEXT NUMBER
3416	2042	ISE REGC		
3417	5211	JMP T176B		/WAIT ABOUT 15 MS FOR REGISTER
3420	5224	JMP T176A1		/NUMBER NOT FOUND
3421	2041	ISE REG8		/UPDATE COMPARE REGISTER
3422	5205	JMP T176B1		/TEST FOR NEXT COUNTER PULSE
3423	4472	JMS I NERROR		/CHECK NON-ERROR HANDLER
3424	4473	JMS I ERROR		/ERROR! COUNTER FAILED
3425	4176	JMS I ERROR		/TST176 ERROR MESSAGE
3426	5377	TST176		/SCOPE LOOP
		/DOES COUNTER REALLY COUNT ?		
		/RATE 4, MODE 2		
		TST177:		
3427	7340	CLA CLL CMA		/AC TO 7777
3430	4427	JMS I X10TR		/IOT 6133, CLAB
3431	3040	DCA REGA		
3432	1116	TAD K0400		/GET RATE + MODE
3433	1143	TAD K0200		/IOT 6132, CLOC
3434	4426	JMS I X10TP1		/CLEAR THE AC AND LINK
3435	7300	CLA CLL		
3436	3042	DCA REGC		

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3437	1041	TAD REG8		/SAVE OUTPUT FOR ERROR PRINTER
3440	3070	DCA SEND		/IOT 6137, CLCA
3441	4433	JMS I X107R		
3442	7041	CIA		/COMPARE TO THIS REGISTER
3443	1041	TAD REG8		/ARE THEY THE SAME YET ?
3444	7650	SNA CLA		/YES, TEST NEXT NUMBER
3445	5251	JMP T177A		
3446	2042	ISE REGC		/WAIT ABOUT 15 MS FOR REGISTER
3447	5241	JMP T177B		/NUMBER NOT FOUND
3450	5234	JMP T177A1		/UPDATE COMPARE REGISTER
3451	2041	ISE REG8		/TEST FOR NEXT COUNTER PULSE
3452	5235	JMP T177B1		/CHECK NON-ERROR HANDLER
3453	4472	JMS I NERROR		/ERROR! COUNTER FAILED
3454	4473	JMS I ERROR		/TS1177 ERROR MESSAGE
3455	4177	JMS I ERROR		/SCOPE LOOP
3456	3427	TS1177		
		/DOES COUNTER REALLY COUNT ?		
		/RATE 4, MODE 3		
		/TS1200, CLA CLL CH1		/AC TO 7777
3457	7340	JMS I X107B		/IOT 6133, CLAB
3460	4427	DCA REGA		
3461	3040	TAD K0400		/GET RATE & MODE
3462	1116	TAD K0400		/IOT 6132, CLOE
3463	1120	JMS I X107P1		/CLEAR THE AC AND LINK
3464	4426	JMS I X107P1		
3465	7300	CLA CLL		/SAVE OUTPUT FOR ERROR PRINTER
3466	3042	DCA REGC		/IOT 6137, CLCA
3467	1041	TAD REG8		/COMPARE TO THIS REGISTER
3470	3070	DCA SEND		/ARE THEY THE SAME YET ?
3471	4493	JMS I X107R		/YES, TEST NEXT NUMBER
3472	7041	CIA		
3473	1041	TAD REG8		/WAIT ABOUT 15 MS FOR REGISTER
3474	7650	SNA CLA		/NUMBER NOT FOUND
3475	5301	JMP T200A		/UPDATE COMPARE REGISTER
3476	2042	ISE REGC		/TEST FOR NEXT COUNTER PULSE
3477	5271	JMP T200B		/CHECK NON-ERROR HANDLER
3500	5304	JMP T200A1		/ERROR! MODE 3, COUNTER FAILED
3501	2041	ISE REG8		/TS1200 ERROR MESSAGE
3502	5265	JMP T200B1		/SCOPE LOOP
3503	4472	JMS I NERROR		
3504	4473	JMS I ERROR		
3505	4200	JMS I ERROR		
3506	3457	TS1200		
		/DO IOT'S AFFECT AC ?		
		/TS1201, CLA CLL CH1		/AC TO 7777
3507	7340	JMS I X107B		/IOT 6133, CLAB
3510	4427	DCA REGA		/PASS COUNT 1
3511	3040	6007		/CAP OR CLEAR THE WORLD
3512	6007	TAD K1000		
3513	1144	TAD K1000		/GET ENABLES
3514	1015	JMS I X107P1		/IOT 6132, CLOE
3515	4426	JMS I X107P1		/IOT 6131, CLSK
3516	4424	JMS I X107P1		

3517 3316
3520 7340
3521 4423
3522 7300
3523 3090
3524 1041
3525 4432
3526 7040
3527 3301
3530 1041
3531 4433
3532 7040
3533 3301
3534 1041
3535 4430
3536 7040
3537 3301
3540 1041
3541 4431
3542 7040
3543 3301
3544 4424
3545 3304
3546 2041
3547 3322
3550 4492
3551 4493
3552 3201
3553 3507

JMP I=1
CLA CLL CHA
JMS I X107B
CLA CLL
DCA SEND
TAD REGB
JMS I X107J
SEA CLA
JMP T201A
TAD REGB
JMS I X107R
SEA CLA
JMP T201A
TAD REGB
JMS I X107H
SEA CLA
JMP T201A
TAD REGB
JMS I X107Y
SEA CLA
JMP T201A
JMS I X107E
JMP I=1
ISE REGB
JMP T201B
JMS I NERROR
JMS I ERROR
3201
TST201

/WAIT FOR COUNTER TO GET CLEARED
/NOT 6130, CLZE
/CLEAR AC AND LINK
/SAVE OUTPUT FOR ERROR PRINTER
/GET AC NUMBER
/NOT 6136, CLBA
/HAS AC ALL 018 ?
/GET AC NUMBER
/NOT 6137, CLCA
/HAS AC ALL 018 ?
/GET AC NUMBER
/NOT 6134, CLEN
/HAS AC ALL 018 ?
/GET AC NUMBER
/NOT 6135, CLSA
/HAS AC ALL 019 ?
/NOT 6131, CLSK SET ?
/HAS FLAG STILL SET ?
/UPDATE PASS COUNTER
/TEST TOTIS AGAIN
/CHECK NON-ERROR HANDLER
/ERROR! TOT FAILED
/TST201 ERROR MESSAGE
/SCOPE LOOP

/TYPE PASS COMPLETE
/CONTINUE TRYING

/DOES INPUT 4 CAUSE INT. RST?

JMS I XPASS
JMP I XOKSEP

3556 7300
3557 1112
3560 7340
3561 3040
3563 7307
3564 1142
3565 4425
3566 4456
3567 4472
3570 4493
3571 1002
3572 3561

CLA CLL
TAD K7400
DCA LOOP CHA
DCA REGA
CLA CLL IAB RTL
TAD K0010
JMS I X107P
JMS I XPIG02
JMS I NERROR
JMS I ERROR
1002
TST202

/LOAD LOOP COUNTER
/AC TO 7777
/AC TO 0004
/GET ENABLES
/NOT 6132, CLOE
/GO TO PI: PI EXPECTED
/CHECK NON-ERROR HANDLER
/ERROR! INPUT 4 FAILED
/TST202 ERROR MESSAGE
/SCOPE LOOP

/DOES INPUT 2 CAUSE INT. RST?

JMS I XPASS
JMP I XOKSEP

3573 7340
3574 3040
3575 7326
3576 1142

TST203, CLA CLL CHA
DCA REGA
CLA CLL CHL RTL
TAD K0010

/AC TO 7777
/AC TO 0002
/GET ENABLES

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3577	4425	JMS I XIOTP	/IOT 6132, CLOE	
3600	4450	JMS I XPIG02	/GO TO PI, PI EXPECTED	
3601	4472	JMS I NERROR	/CHECK NON-ERROR HANDLER	
3602	4473	JMS I ERROR	/ERROR! INPUT 2 FAILED	
3603	1603		/TST203 ERROR MESSAGE	
3604	3593	TST203	/SCOPE LOOP	
		/DOES INPUT 1 CAUSE INT. ROST?		
		/		
3605	7340	TST204, CLA CLL CHA	/AC TO 7777	
3606	3040	DCA REGA		
3607	7324	CLA CLL CHL RAL	/AC TO 0001	
3610	1142	TAD K0010	/GET ENABLES	
3611	4425	JMS I XIOTP	/IOT 6132, CLOE	
3612	4450	JMS I XPIG02	/GO TO PI, PI EXPECTED	
3613	4472	JMS I NERROR	/CHECK NON-ERROR HANDLER	
3614	4473	JMS I ERROR	/ERROR! INPUT 1 FAILED	
3615	1604	1604	/TST204 ERROR MESSAGE	
3616	3605	TST204	/SCOPE LOOP	
		/DOES INPUT 4 ROST? LAST ?		
		/		
3617	7340	TST205, CLA CLL CHA	/AC TO 7777	
3620	3040	DCA REGA		
3621	7307	CLA CLL IAC RTL	/AC TO 0004	
3622	1142	TAD K0010	/GET ENABLES	
3623	4425	JMS I XIOTP	/IOT 6132, CLOE	
3624	4447	JMS I XPIG01	/GO TO PI, PI EXPECTED	
3625	5232	JMP T205A	/NO ROST, FOUND	
3626	2041	ISE REGB	/UPDATE COUNTER	
3627	5226	JMP I=1	/WAIT 15 MS	
3630	4450	JMS I XPIG02	/GO TO PI, PI EXPECTED	
3631	4472	JMS I NERROR	/CHECK NON-ERROR HANDLER	
3632	4473	JMS I ERROR	/ERROR! INPUT 4 FAILED	
3633	1605	1605	/TST205 ERROR MESSAGE	
3634	3617	TST205	/SCOPE LOOP	
		/DOES INPUT 2 ROST? LAST ?		
		/		
3635	7340	TST206, CLA CLL CHA	/AC TO 7777	
3636	3040	DCA REGA		
3637	7305	CLA CLL IAC RAL	/AC TO 0002	
3640	1142	TAD K0010	/GET ENABLES	
3641	4425	JMS I XIOTP	/IOT 6132, CLOE	
3642	4450	JMS I XPIG01	/GO TO PI, PI EXPECTED	
3643	5250	JMP T206A	/NO ROST, FOUND	
3644	2041	ISE REGB	/UPDATE COUNTER	
3645	5244	JMP I=1	/WAIT 15 MS	
3646	4450	JMS I XPIG02	/GO TO PI, PI EXPECTED	
3647	4472	JMS I NERROR	/CHECK NON-ERROR HANDLER	
3650	4473	JMS I ERROR	/ERROR! INPUT 2 FAILED	
3651	1606	1606	/TST206 ERROR MESSAGE	
3652	3635	TST206	/SCOPE LOOP	
		/DOES INPUT 1 ROST? LAST ?		


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3653 7340 /
3654 3040 /TST207, CLA CLL CHA /AC TO 7777
3655 7324 CLA REGA DCA REGA /AC TO 0001
3656 1142 TAD CLL CHL RAL /GET ENABLES
3657 4425 JMS I XIOTF /IOT 6132: CLOE
3658 4447 JMS I XPIG01 /GO TO PI, PI EXPECTED
3659 5266 JMP T207A /NO RQST. FOUND
3660 2041 ISX REG8 /UPDATE COUNTER
3661 5262 JMP I=1 /WAIT 15 NS
3662 4480 JMS I XPIG02 /GO TO PI, PI EXPECTED
3663 4472 JMS I NERROR /CHECK NON-ERROR HANDLER
3664 4473 JMS I ERROR /ERROR! INPUT 1 FAILED
3665 1607 /TST207 ERROR MESSAGE
3666 3693 /SCOPE LOOP
3667 3693 /DOES INPUTS 4,2,1 WITHOUT BIT 8 ?
3668 3693 /TST210, CLA CLL CHA /AC TO 7777
3669 3040 DCA REGA /AC TO 7777
3670 7313 CLA CLL IAC RTR /AC TO 4000
3671 1007 TAD K0007
3672 1147 TAD K0000
3673 4425 JMS I XIOTF /IOT 6132: CLOE
3674 4425 JMS I XPIG01 /GO TO PI, NO PI EXPECTED
3675 4472 JMS I NERROR /CHECK NON-ERROR HANDLER
3676 4473 JMS I ERROR /ERROR! INPUT 8 FAILED
3677 1210 JMS I ERROR /TST210 ERROR MESSAGE
3678 3691 /SCOPE LOOP
3679 3691 /DOES INPUT 4 CAUSE SKIP ?
3680 3691 /TST211, CLA CLL CHA /AC TO 7777
3681 3040 DCA REGA /AC TO 7777
3682 1113 TAD K110PS
3683 3045 DCA REGF
3684 7307 CLA CLL IAC RTL /AC TO 0004
3685 4425 JMS I XIOTF /IOT 6132: CLOE
3686 4424 JMS I XIOTE /IOT 6131: CLSK
3687 4446 JMS I SKPHAT /LET'S WAIT FOR A FLAG
3688 4472 JMS I NERROR /CHECK NON-ERROR HANDLER
3689 4473 JMS I ERROR /ERROR! INPUT 4 OR SKIP FAILED
3690 0611 /TST211 ERROR MESSAGE
3691 3704 /SCOPE LOOP
3692 3704 /DOES INPUT 2 CAUSE SKIP ?
3693 3704 /TST212, CLA CLL CHA /AC TO 7777
3694 3040 DCA REGA /AC TO 7777
3695 1113 TAD K110PS
3696 3045 DCA REGF
3697 7326 CLA CLL CHL RTL /AC TO 0002
3698 4425 JMS I XIOTF /IOT 6132: CLOE
3699 4424 JMS I XIOTE /IOT 6131: CLSK
3700 4446 JMS I SKPHAT /LET'S WAIT FOR A FLAG

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3730	4492	JMS I ERROR		/CHECK NON-ERROR HANDLER
3731	4493	JMS I ERROR		/ERROR! INPUT 2 OR SKIP FAILED
3732	0612	0612		/TST212 ERROR MESSAGE
3733	3720	TST212		/SCOPE LOOP
		/DOES INPUT 1 CAUSE SKIP ?		
		/		
3734	7340	TST213, CLA CLL CHA		/AC TO 7777
3735	3040	DCA REGA		
3736	1113	TAD KTICPS		
3737	3045	DCA REGF		
3740	7301	CLA CLL IAC		/AC TO 0001
3741	4425	JMS I XIOTF		/IOT 6132, CLOE
3742	4424	JMS I XIOTE		/IOT 6131, CLSK
3743	4446	JMS I SKPWAT		/LET'S WAIT FOR FLAG
3744	4492	JMS I ERROR		/CHECK NON-ERROR HANDLER
3745	4473	JMS I ERROR		/ERROR! INPUT 1 OR SKIP FAILED
3746	0613	0613		/TST213 ERROR MESSAGE
3747	3734	TST213		/SCOPE LOOP
		/DOES INPUT 4 RQST: THEN SKIP AND VICE=VERSA ?		
		/		
3750	7340	TST214, CLA CLL CHA		/AC TO 7777
3751	3040	DCA REGA		
3752	7307	CLA CLL IAC RTL		/AC TO 0004
3753	1142	TAD K0010		/GET ENABLES
3754	4425	JMS I XIOTF		/IOT 6132, CLOE
3755	4424	JMS I XIOTE		/IOT 6131, CLSK
3756	5355	JMP I=1		
3757	4447	JMS I XPIG01		/GO TO PI, PI EXPECTED
3760	5364	JMP T214A		/NO RQST, FOUND
3761	4424	JMS I XIOTE		/IOT 6131, CLSK
3762	5361	JMP I=1		
3763	4492	JMS I ERROR		/CHECK NON-ERROR HANDLER
3764	4473	JMS I ERROR		/ERROR! INPUT 4 SKIP OR INT, RQST: FAILED
3765	1614	1614		/TST214 ERROR MESSAGE
3766	3750	TST214		/SCOPE LOOP
		/DOES INPUT 2 SKIP THEN INT, RQST, AND VICE=VERSA ?		
		/		
3767	7340	TST215, CLA CLL CHA		/AC TO 7777
3770	3040	DCA REGA		
3771	7305	CLA CLL IAC RAL		/AC TO 0002
3772	1142	TAD K0010		/GET ENABLES
3773	4425	JMS I XIOTF		/IOT 6132, CLOE
3774	4424	JMS I XIOTE		/IOT 6131, CLSK
3775	5394	JMP I=1		
3776	4447	JMS I XPIG01		/GO TO PI, PI EXPECTED
3777	5595	JMP I XCRS9		
4000	4424	JMS I XIOTE		/IOT 6131, CLSK
4001	5200	JMP I=1		
4002	4492	JMS I ERROR		/CHECK NON-ERROR HANDLER
4003	4473	JMS I ERROR		/ERROR! INPUT 2 SKIP OR RQST: FAILED
4004	1615	1615		/TST215 ERROR MESSAGE
4005	3767	TST215		/SCOPE LOOP


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4006 7340  /DOES INPUT 1 SKIP THEN INT, RQST, AND VICE-VERSA ?
4007 3040  /
4010 7301  /TST216, CLA CLL CMĀ
4011 1142  OCA REGA /AC TO 7777
4012 4425  CLA CLL IAC /AC TO 0001
4013 4424  TAD K0010 /GET ENABLES
4014 5213  JMS I XIOTF /IOT 6132, CLOE
4015 4447  JMS I XIOTE /IOT 6131, CLSK
4016 5222  JMP I=1 /GO TO PI, PI EXPECTED
4017 4424  JMS I XPI001 /IOT 6131, CLSK
4018 5217  JMP T216A
4019 4472  JMP I=1 /CHECK NON-ERROR HANDLER
4020 4472  JMS I NERROR /ERROR! INPUT 1 SKIP OR INT, RQST, FAILED
4021 4473  JMS I ERROR /TST216 ERROR MESSAGE
4022 4473  1616 /SCOPE LOOP
4023 1616  TST216
4024 4906  /DOES CAF CLEAR INPUT 4 INT, RQST, ?
4025 7340  /
4026 3040  /TST217, CLA CLL CMĀ
4027 7307  OCA REGA /AC TO 7777
4030 4425  CLA CLL IAC RTL /AC TO 0004
4031 4424  JMS I XIOTF /IOT 6132, CLOE
4032 5231  JMS I XIOTE /IOT 6131, CLSK
4033 6007  JMP I=1 /WAIT FOR FIRST FLAG
4034 7307  CLA CLL IAC RTL /CAF OR CLEAR THE WORLD
4035 4425  JMS I XIOTF /AC TO 0004
4036 4424  JMS I XIOTE /IOT 6132, CLOE
4037 5236  JMP I=1 /IOT 6131, CLSK
4040 6007  /WAIT FOR SECOND FLAG
4041 7307  CLA CLL IAC RTL /CAF OR CLEAR THE WORLD
4042 4425  JMS I XIOTF /IOT 6132, CLOE
4043 4424  JMS I XIOTE /IOT 6131, CLSK
4044 4472  JMS I NERROR /CHECK NON-ERROR HANDLER
4045 4473  JMS I ERROR /ERROR! INPUT 4 SKIP OR RQST, FAILED
4046 0217  0217 /TST217 ERROR MESSAGE
4047 4025  TST217 /SCOPE LOOP

4050 7340  /DOES CAF CLEAR INPUT 2 RQST, ?
4051 3040  /
4052 7305  /TST220, CLA CLL CMĀ
4053 4425  OCA REGA /AC TO 7777
4054 4424  CLA CLL IAC RAL /AC TO 0002
4055 5254  JMS I XIOTF /IOT 6132, CLOE
4056 6007  JMS I XIOTE /IOT 6131, CLSK
4057 7305  JMP I=1 /WAIT FOR FIRST FLAG
4058 4425  CLA CLL IAC RAL /CAF OR CLEAR THE WORLD
4059 4425  JMS I XIOTF /AC TO 0002
4060 4424  JMS I XIOTE /IOT 6132, CLOE
4061 5261  JMP I=1 /IOT 6131, CLSK
4062 6007  /WAIT FOR SECOND FLAG
4063 6007  /CAF OR CLEAR THE WORLD
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4064 CLA CLL IAC RAL /AC TO 0002
4065 JMS I XIOTP /IOT 6132, CLOE
4066 JMS I XIOTE /IOT 6131, CLSK
4067 JMS I NERRR /CHECK NON-ERROR HANDLER
4070 JMS I ERROR /ERROR! INPUT 2 SKIP OR POST, FAILED
4071 0220 /TST220 ERROR MESSAGE
4072 TST220 /SCOPE LOOP

/DOES CAP CLEAR INPUT 3 ROST, ?
/
TST221, CLA CLL CHA /AC TO 7777
DCA REGA
CLA CLL IAC /AC TO 0001
JMS I XIOTP /IOT 6132, CLOE
JMS I XIOTE /IOT 6131, CLSK
JMP .-1 /WAIT FOR FIRST FLAG
0007 /CAP OR CLEAR THE WORLD
CLA CLL IAC /AC TO 0001
JMS I XIOTP /IOT 6132, CLOE
JMS I XIOTE /IOT 6131, CLSK
JMP .-1 /WAIT FOR SECOND FLAG
0007 /CAP OR CLEAR THE WORLD
CLA CLL IAC /IOT 6132, CLOE
JMS I XIOTP /IOT 6131, CLSK
JMS I NERRR /CHECK NON-ERROR HANDLER
JMS I ERROR /ERROR! INPUT 1 SKIP OR POST, FAILED
0221 /TST221 ERROR MESSAGE
TST221 /SCOPE LOOP

/DOES CLSA READ ROST, INPUT 4 ?
/
TST222, CLA CLL CHA /AC TO 7777
DCA REGA
CLA CLL IAC RTL /AC TO 0004
JMS I XIOTP /IOT 6132, CLOE
JMS I XIOTE /IOT 6131, CLSK
JMP .-1 /WAIT FOR FLAG
0007 /AC TO 7773
CLA CLL IAC /IOT 6135, CLSA
JMS I XIOTP /CHECK SEND AND RECEV REGISTERS
JMS I XSNDRV /CHECK NON-ERROR HANDLER
JMS I NERRR /ERROR! CLSA OR INPUT 4 FAILED
JMS I ERROR /TST222 ERROR MESSAGE
5222 /SCOPE LOOP
TST222

/DOES CLSA READ ROST, INPUT 2 ?
/
TST223, CLA CLL CHA /AC TO 7777
DCA REGA
CLA CLL IAC RAL /AC TO 0002
JMS I XIOTP /IOT 6132, CLOE
JMS I XIOTE /IOT 6131, CLSK
JMP .-1 /WAIT FOR FLAG
0007 /AC TO 7775
CLA CLL IAC

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PAL10	V142	2200CT=73	9195	PAGE 1=49
4142	4431	JMS I XIOTI	/IOT 6135, CLSA	
4143	4436	JMS I XSNDRV	/CHECK SEND AND RECEV REGISTERS	
4144	4472	JMS I NERROR	/CHECK NON-ERROR HANDLER	
4145	4473	JMS I ERROR	/ERROR1 CLSA OR INPUT 2 FAILED	
4146	5223	0223	/TST223 ERROR MESSAGE	
4147	4133	TST223	/SCOPE LOOP	
		/DOES CLSA READ ROST, INPUT 1 ?		
4150	7340	TST224, CLA CLL CM1	/AC TO 7777	
4151	3040	DCA REGA		
4152	7301	CLA CLL IAC	/AC TO 0001	
4153	4425	JMS I XIOTI	/IOT 6132, CLOE	
4154	4424	JMS I XIOTE	/IOT 6131, CLSK	
4155	5354	JMP I=1	/WAIT FOR FLAG	
4156	7040	CMA	/AC TO 7776	
4157	4431	JMS I XIOTI	/IOT 6135, CLSA	
4160	4450	JMS I XSNDRV	/CHECK SEND AND RECEV REGISTERS	
4161	4492	JMS I NERROR	/CHECK NON-ERROR HANDLER	
4162	4473	JMS I ERROR	/ERROR1 CLSA OR INPUT 1 FAILED	
4163	5224	5224	/TST224 ERROR MESSAGE	
4164	4150	TST224	/SCOPE LOOP	
		/DOES CLSA CLEAR INPUT 4 ROST, ?		
4165	7340	TST225, CLA CLL CM1	/AC TO 7777	
4166	3040	DCA REGA		
4167	7307	CLA CLL IAC RTL	/AC TO 0004	
4170	4426	JMS I XIOTI	/IOT 6132, CLOE	
4171	4424	JMS I XIOTE	/IOT 6131, CLSK	
4172	5391	JMP I=1	/WAIT FOR FIRST FLAG	
4173	4431	JMS I XIOTI	/IOT 6135, CLSA	
4174	4424	JMS I XIOTE	/IOT 6131, CLSK	
4175	5374	JMP I=1	/WAIT FOR SECOND FLAG	
4176	4431	JMS I XIOTI	/IOT 6135, CLSA	
4177	4424	JMS I XIOTE	/IOT 6131, CLSK	
4200	4492	JMS I NERROR	/CHECK NON-ERROR HANDLER	
4201	4493	JMS I ERROR	/ERROR1 CLSA OR INPUT 1 FAILED	
4202	0225	0225	/TST225 ERROR MESSAGE	
4203	4165	TST225	/SCOPE LOOP	
		/DOES CLSA CLEAR INPUT 2 ROST, ?		
4204	7340	TST226, CLA CLL CM1	/AC TO 7777	
4205	3040	DCA REGA		
4206	7305	CLA CLL IAC RAL	/AC TO 0002	
4207	4425	JMS I XIOTI	/IOT 6132, CLOE	
4210	4424	JMS I XIOTE	/IOT 6131, CLSK	
4211	5210	JMP I=1	/WAIT FOR FIRST FLAG	
4212	4431	JMS I XIOTI	/IOT 6135, CLSA	
4213	4424	JMS I XIOTE	/IOT 6131, CLSK	
4214	5213	JMP I=1	/WAIT FOR SECOND FLAG	
4215	4431	JMS I XIOTI	/IOT 6135, CLSA	
4216	4424	JMS I XIOTE	/IOT 6131, CLSK	
4217	4492	JMS I NERROR	/CHECK NON-ERROR HANDLER	

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4220	4473	JMS I ERROR		/ERROR! CLSA OR INPUT 2 FAILED
4221	0226	0226		/TST226 ERROR MESSAGE
4222	4204	TST226		/SCOPE LOOP
/DOES CLSA CLEAR INPUT 4 RQST; ?				
4223	7340	TST227, CLA CLL CMX		/AC TO 7777
4224	3040	DCA REGA		/AC TO 0001
4225	7301	CLA CLL IAC		/IOT 6132, CLOE
4226	4425	JMS I XIOTF		/IOT 6131, CLSK
4227	4424	JMS I XIOTE		/WAIT FOR FIRST FLAG
4230	5227	JMP I=1		/IOT 6135, CLSA
4231	4431	JMS I XIOTI		/IOT 6131, CLSK
4232	4424	JMS I XIOTE		/WAIT FOR SECOND FLAG
4233	5232	JMP I=1		/IOT 6135, CLSA
4234	4431	JMS I XIOTI		/IOT 6131, CLSK
4235	4424	JMS I XIOTE		/CHECK NON-ERROR HANDLER
4236	4472	JMS I NERROR		/ERROR! CLSA OR INPUT 1 FAILED
4237	4473	JMS I ERROR		/TST227 ERROR MESSAGE
4240	0227	0227		/SCOPE LOOP
4241	4223	TST227		
/DOES CLSA READ INPUT 4,2,1 ?				
4242	7340	TST230, CLA CLL CMX		/AC TO 7777
4243	3040	DCA REGA		/GET ENABLES
4244	1007	TAD K0007		/IOT 6132, CLOE
4245	4425	JMS I XIOTF		/WAIT FOR ALL
4246	7000	NOP		/IOT 6131, CLOE
4247	2041	ISE REG8		/WAIT FOR FLAGS
4250	5246	JMP I=2		/AC TO 7777
4251	4424	JMS I XIOTE		/IOT 6135, CLSA
4252	5251	JMP I=1		/CHECK SEND AND RECEV REGISTERS
4253	7340	CLA CLL CMX		/ERROR, STATUS REGISTER
4254	4431	JMS I XIOTI		/SAVE OUTPUT FOR ERROR PRINTER
4255	4456	JMS I XSNDV		/AC TO 7777
4256	7610	SKP CLA		/IOT 6135, CLSA
4257	5255	JMP T230A		/WAS STATUS ALL 015 ?
4260	3070	DCA SEND		/CHECK NON-ERROR HANDLER
4261	7340	CLA CLL CMX		/ERROR! CLSA OR INPUTS 1,2,3 FAILED
4262	4431	JMS I XIOTI		/TST230 ERROR MESSAGE
4263	7650	SNA CLA		/SCOPE LOOP
4264	4472	JMS I NERROR		
4265	4473	JMS I ERROR		
4266	5250	3250		
4267	4262	TST230		
/DOES INPUT 4 CLEAR BIT 7 ?				
4270	7340	TST231, CLA CLL CMX		/AC TO 0004
4271	3040	DCA REGA		/SAVE OUTPUT FOR ERROR PRINTER
4272	7307	CLA CLL IAC RYL		/GET ENABLES
4273	3070	DCA SEND		
4274	1070	TAD SEND		
4275	1140	TAD K0020		

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4276	4426	JMS I X10TP1		/IOT 6132, CLOE
4277	4424	JMS I X10TE		/IOT 6131, CLSK
4300	5277	JMP I=1		/WAIT FOR FLAG
4301	7340	CLA CLL CMĀ		/AC TO 7777
4302	4430	JMS I X10TH		/IOT 6134, CLEN
4303	4456	JMS I XSNDRV		/CHECK SEND AND RECEV REGISTERS
4304	4492	JMS I NERROR		/CHECK NON-ERROR HANDLER
4305	4493	JMS I ERROR		/ERROR BIT 7 OR INPUT 4 FAILED
4306	4631	4631		/TST231 ERROR MESSAGE
4307	4270	TST231		/SCOPE LOOP

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/DOES INPUT 2 CLEAR BIT 7 ?
/
TST232, CLA CLL CMĀ
DCA REGA
CLA CLL IAB RAL /AC TO 0002
DCA SEND /SAVE OUTPUT FOR ERROR PRINTER
TAD SEND
TAD K0020
JMS I X10TP1
JMS I X10TE
JMP I=1
CLA CLL CMĀ
JMS I X10TH
JMS I XSNDRV
JMS I NERROR
JMS I ERROR
4632
TST232

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/DOES INPUT 1 CLEAR BIT 7 ?
/
TST233, CLA CLL CMĀ
DCA REGA
CLA CLL IAC
DCA SEND
TAD SEND
TAD K0020
JMS I X10TP1
JMS I X10TE
JMP I=1
CLA CLL CMĀ
JMS I X10TH
JMS I XSNDRV
JMS I NERROR
JMS I ERROR
4633
TST233

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/DOES INPUT 4,2,1 GENERATE CLR CNT ?
/MODE 3, RATE 0
/
TST234, CLA CLL CMĀ
DCA REGA
TAD K2525

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4330	7340	4330	7340
4331	3040	4331	3040
4332	7301	4332	7301
4333	3070	4333	3070
4334	1090	4334	1090
4335	1140	4335	1140
4336	4426	4336	4426
4337	4424	4337	4424
4340	5337	4340	5337
4341	7340	4341	7340
4342	4430	4342	4430
4343	4456	4343	4456
4344	4472	4344	4472
4345	4493	4345	4493
4346	4633	4346	4633
4347	4330	4347	4330

4350	7340	
4351	3040	
4352	1016	

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4353 JMS I XIOTG
4354 CLA CLL IAC RTL
4355 TAD K3000
4356 JMS I XIOTF1
4357 JMS I XIOTE
4358 JMP I=1
4359 CLA CLL
4360 DCA SEND
4361 CLA CLL GMA
4362 JMS I XIOTR
4363 SNA CLA
4364 JMS I NERROR
4365 JMS I ERROR
4366 4234
4367 TST234
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/DOES INPUT 4.2.1 CAUSE CLR CNT ?
 /MODE 3, RATE 0
 /TST235, CLA CLL GMA
 DCA REGA
 TAD K5252
 JMS I XIOTG
 CLA CLL IAC RAL
 TAD K3000
 JMS I XIOTF1
 JMS I XIOTE
 JMP I=1
 CLA CLL
 DCA SEND
 CLA CLL GMA
 JMS I XIOTR
 SNA CLA
 JMS I NERROR
 JMS I ERROR
 4235
 TST235
 /DOES INPUT 4.2.1 TRANSFER COUNTER TO BUFFER ?
 /TST236, CLA CLL GMA
 DCA REGA
 TAD K5252
 JMS I XIOTG
 6207
 CLA CLL IAC
 TAD K3000
 JMS I XIOTF1
 JMS I XIOTE
 JMP I=1
 CLA CLL GMA
 JMS I XIOTR
 JMS I XSDRAV
 JMS I NERROR
 JMS I ERROR

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4433	3636	3636		/TST236 ERROR MESSAGE
4434	4414	TST236		/SCOPE LOOP
/DOES INPUT 4,2,1 TRANSFER COUNTER TO BUFFER ?				
4435	7340	TST237,	CLA CLL CHA	/AC TO 7777
4436	3040		DCA REGA	
4437	1017		TAD K5252	/GET AC NUMBER
4440	4427		JMS I XIOTG	/IOT 6133, CLAB
4441	6007		6007	/CAF OR CLEAR THE WORLD
4442	7301		CLA CLL IAC	/AC TO 0001
4443	1120		TAD K3000	/GET ENABLES
4444	4426		JMS I XIOTF1	/IOT 6132, CLOE
4445	4424		JMS I XIOTE	/IOT 6131, CLSK
4446	5245		JMP I=1	/WAIT FOR FLAG
4447	7340		CLA CLL CHA	/AC TO 7777
4450	4432		JMS I XIOTJ	/IOT 6136, CLBA
4451	4456		JMS I XSNDRV	/CHECK SEND AND RECEV REGISTERS
4452	4472		JMS I NERROR	/CHECK NON-ERROR HANDLER
4453	4473		JMS I ERROR	/ERROR! COUNTER TO BUFFER FAILED
4454	3637		3637	/TST237 ERROR MESSAGE
4455	4435		TST237	/SCOPE LOOP
/DOES INPUT 4,2,1 GENERATE CLR CNT ?				
/MODE 2, RATE 0				
4456	7340	TST240,	CLA CLL CHA	/AC TO 7777
4457	3040		DCA REGA	
4460	1016		TAD K2525	/GET AC NUMBER
4461	4427		JMS I XIOTG	/IOT 6133, CLAB
4462	6007		6007	/CAF OR CLEAR THE WORLD
4463	7307		CLA CLL IAC RTL	/AC TO 0004
4464	1143		TAD K2000	/GET ENABLES
4465	4426		JMS I XIOTF1	/IOT 6132, CLOE
4466	4424		JMS I XIOTE	/IOT 6131, CLSK
4467	5266		JMP I=1	/WAIT FOR FLAG
4470	7340		CLA CLL CHA	/AC TO 7777
4471	4433		JMS I XIOTR	/IOT 6137, CLCA
4472	4456		JMS I XSNDRV	/CHECK SEND AND RECEV REGISTERS
4473	4472		JMS I NERROR	/CHECK NON-ERROR MESSAGE
4474	4473		JMS I ERROR	/ERROR! CLR CNT FAILED, MODE 2
4475	4240		4240	/TST240 ERROR MESSAGE
4476	4456		TST240	/SCOPE LOOP
/DOES INPUT 4,2,1 CAUSE CLR CNT ?				
/MODE 2, RATE 0				
4477	7340	TST241,	CLA CLL CHA	
4500	3040		DCA REGA	
4501	1017		TAD K5252	/GET AC NUMBER
4502	4427		JMS I XIOTG	/IOT 6133, CLAB
4503	6007		6007	/CAF OR CLEAR THE WORLD
4504	7305		CLA CLL IAC RAL	/AC TO 0002
4505	1143		TAD K2000	/GET ENABLES


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10      V142      22-OCT-73      9155      PAGE 1-54
4506      JMS I X10TF1      /IOT 6132, CLOE
4507      JMS I X10TE      /IOT 6131, CLSK
4510      JMP I=1      /WAIT FOR FLAG
4511      CLA CLL CMA      /AC TO 7777
4512      JMS I X10TK      /IOT 6137, CLCA
4513      JMS I XSNDRV      /CHECK SEND AND RECEV REGISTERS
4514      JMS I NERROR      /CHECK NON-ERROR HANDLER
4515      JMS I ERROR      /ERROR! CLR CNT FAILED, MODE 2
4516      4241      /TST241 ERROR MESSAGE
4517      TST241      /SCOPE LOOP

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/DOES COUNTER TRANSFER TO BUFFER 7
/MODE 2, RATE 0
/

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4520      TST242, CLA CLL CMA      /AC TO 7777
4521      DCA REGA
4522      TAD K2525
4523      JMS I X10TD      /GET AC NUMBER
4524      6007      /IOT 6133, CLAB
4525      CLA CLL IAC RTL      /CAP OR CLEAR THE WORLD
4526      TAD K2000      /GET ENABLES
4527      JMS I X10TF1      /IOT 6132, CLOE
4530      JMS I X10TE      /IOT 6131, CLSK
4531      JMP I=1      /WAIT FOR FLAG
4532      CLA CLL CMA      /AC TO 7777
4533      JMS I X10TJ      /IOT 6136, CLBA
4534      JMS I XSNDRV      /CHECK SEND AND RECEV REGISTERS
4535      JMS I NERROR      /CHECK NON-ERROR HANDLER
4536      JMS I ERROR      /ERROR! COUNTER TO BUFFER FAILED
4537      3642      /TST242 ERROR MESSAGE
4540      TST242      /SCOPE LOOP

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/DOES COUNTER TRANSFER TO BUFFER 7
/MODE 2, RATE 0
/

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4541      TST243, CLA CLL CMA      /AC TO 7777
4542      DCA REGA
4543      TAD K2522
4544      JMS I X10TD      /GET AC NUMBER
4545      6007      /IOT 6133, CLAB
4546      CLA CLL IAC RAL      /CAP OR CLEAR THE WORLD
4547      TAD K2000      /GET ENABLES
4550      JMS I X10TF1      /IOT 6132, CLOE
4551      JMS I X10TE      /IOT 6131, CLSK
4552      JMP I=1      /WAIT FOR FLAG
4553      CLA CLL CMA
4554      JMS I X10TJ      /IOT 6136, CLBA
4555      JMS I XSNDRV      /CHECK SEND AND RECEV REGISTERS
4556      JMS I NERROR      /CHECK NON-ERROR HANDLER
4557      JMS I ERROR      /ERROR! COUNTER TO BUFFER FAILED
4560      3643      /TST243 ERROR MESSAGE
4561      TST243      /SCOPE LOOP

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/DOES INPUT 4,2,1 AFFECT MODE 0 7
/

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/AL10      22-OCT-73      9155      PAGE 1055
7340      4562      CLA CLL CMA
7340      4563      DCA REGA
7340      4564      TAD K2525
7340      4565      JMS I X10TG
7340      4566      6007
7340      4567      CLA CLL IAC RTL
7340      4570      JMS I X10T#1
7340      4571      JMS I X10TE
7340      4572      JMP I-1
7340      4573      CLA CLL CMA
7340      4574      JMS I X10T#1
7340      4575      JMS I XSNDRV
7340      4576      JMS I NERROR
7340      4577      JMS I ERROR
7340      4600      4244
7340      4601      TST244
7340      4562
/DOES INPUT 4.21.1 AFFECT MODE 0 ?
/DOES INPUT 4.21.1 AFFECT MODE 0 ?
TST244, CLA CLL CMA
DCA REGA
TAD K2525
JMS I X10TG
CLA CLL IAC
JMS I X10T#1
JMS I X10TE
JMP I-1
CLA CLL CMA
JMS I X10T#1
JMS I XSNDRV
JMS I NERROR
JMS I ERROR
3645
TST245
/DOES INPUT 4.21.1 AFFECT MODE 1 ?
/DOES INPUT 4.21.1 AFFECT MODE 1 ?
TST246, CLA CLL CMA
DCA REGA
TAD K2525
JMS I X10TG
DCA SEND
CLA CLL IAC
TAD K1000
JMS I X10T#1
JMS I X10TE
JMP I-1
CLA CLL CMA
JMS I X10T#1
SNA CLA
JMS I NERROR
JMS I ERROR
4246
TST246

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7340      4602      7340
7340      4603      3040
7340      4604      1017
7340      4605      4427
7340      4606      7301
7340      4607      4426
7340      4610      4424
7340      4611      5210
7340      4612      7340
7340      4613      4432
7340      4614      4436
7340      4615      4472
7340      4616      4473
7340      4617      3645
7340      4620      4602
/GET AC NUMBER
/LOT 6133, CLAB
/CAF OR CLEAR THE WORLD
/AC TO 0004
/LOT 6132, CLOE
/LOT 6131, CLSK
/WAIT FOR FLAG
/AC TO 7777
/LOT 6137, CLCA
/CHECK SEND AND RECEV REGISTERS
/CHECK NON-ERROR HANDLER
/ERROR1 MODE 0 FAILED
/TST 244 ERROR MESSAGE
/SCOPE LOOP

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7340      4621      7340
7340      4622      3040
7340      4623      1016
7340      4624      4427
7340      4625      6007
7340      4626      3070
7340      4627      7301
7340      4630      1144
7340      4631      4426
7340      4632      4424
7340      4633      5232
7340      4634      7340
7340      4635      4432
7340      4636      7650
7340      4637      4472
7340      4640      4473
7340      4641      4246
7340      4642      4621
/GET AC NUMBER
/LOT 6133, CLAB
/CAF OR CLEAR THE WORLD
/SAVE OUTPUT FOR ERROR PRINTER
/AC TO 0001
/GET ENABLER
/LOT 6132, CLOE
/LOT 6131, CLSK
/WAIT FOR FLAG
/AC TO 7777
/LOT 6136, CLBA
/WAS BUFFER STILL ALL MIS ?
/CHECK NON-ERROR HANDLER
/ERROR1 MODE 1 FAILED
/TST246 ERROR MESSAGE
/SCOPE LOOP

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/DOES INPUT 4,2,1 AFFECT MODE 1 ?
TST247, CLA CLL CMA /AC TO 7777
DCA REGA /GET AC NUMBER
TAD K5252 /IOT 6133, CLAB
JMS I XIOTG /AC TO 0004
CLA CLL IAC RYL
TAD K1000 /IOT 6132, CLOE
JMS I XIOTF1 /IOT 6131, CLSK
JMS I XIOTE /WAIT FOR FLAG
JMP I=1 /AC TO 7777
CLA CLL CMA /IOT 6136, CLBA
JMS I XIOTJ /CHECK SEND AND RECEV REGISTERS
JMS I XSNDV /CHECK NON-ERROR HANDLER
JMS I NERRR /ERROR! MODE 1 FAILED
JMS I ERROR /TST247 ERROR MESSAGE
3647 /SCOPE LOOP
TST247

/DOES CLSA READ INPUTS 4,2,1 ?
TST250, CLA CLL CMA /AC TO 7777
DCA REGA /GET ENABLES
TAD K0007 /IOT 6132, CLOE
JMS I XIOTF1
NOP
ISE REGB
JMP I=2 /WAIT FOR ALL
JMS I XIOTE /IOT 6131, CLSK
JMP I=1 /IOT 6130, CLZE
JMS I XIOTD /CLEAR THE AC AND LINK
CLA CLL /SAVE OUTPUT FOR ERROR PRINTER
DCA SEND /AC TO 7777
CLA CLL CMA /IOT 6135, CLSA
JMS I XIOTY /HAS STATUS ALL 015 ?
SNA CLA /CHECK NON-ERROR HANDLER
JMS I NERRR /ERROR! INPUT 4,2,1 OR STATUS FAILED
JMS I ERROR /TEST250 ERROR MESSAGE
5250 /SCOPE LOOP
TST250

/DOES CLSA READ STATUS REGISTER ?
TST251, CLA CLL CMA /AC TO 7777
DCA REGA /GET ENABLES
TAD K0007 /IOT 6132, CLOE
JMS I XIOTF
NOP
ISE REGB
JMP I=2 /WAIT FOR FLAGS
JMS I XIOTE /IOT 6131, CLSK
JMP I=1 /AC TO 7777
CLA CLL CMA /IOT 6135, CLSA
JMS I XIOTY

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PAL10	V142	22=OCT=73	9155	PAGE 1=57
4721	4456	JMS I XSNDRV		/CHECK SEND AND RECEV REGISTERS
4722	4472	JMS I NERRR		/CHECK NON=ERROR HANDLER
4723	4473	JMS I ERROR		/ERROR! CLSA OR STATUS REGISTER
4724	5251	5251		/TST251 ERROR MESSAGE
4725	4706	TST251		/SCOPE LOOP
4726	7300	CLA CLL		
4727	2077	ISZ LOOP		
4730	5464	JMP I XMITT		/DO TEST 4096 TIMES
4731	4570	JMS I XPASS		/TYPE PASS COMPLETE
4732	5465	JMP I XMITT1		/CONTINUE TESTING
		/NON=ERROR HANDLER FOR PROGRAM		
5000		*5000		
5000	0000	NERRR,		/CAF OR CLEAR THE WORLD
5001	6007	ISZ NERRR		
5002	2200	ISZ NERRR		
5003	2200	ISZ REGA		
5004	2040	JMP OUT		
5005	5215	JMS I XCLREG		/CLEAR ALL REGISTERS
5006	4460	LAS		
5007	7604	AND K0040		/IS IT LOOP ON NON=
5010	0137	SZA CLA		/FAILING TEST;
5011	7640	JMP OUT		
5012	5215	ISZ NERRR		/TO NEXT TEST
5013	2200	JMP I NERRR		
5014	5600			
5015	1600	OUT,		
5016	3220	DCA ERRO		
5017	5620	JMP I ERRO		
		/ERROR HANDLER FOR PROGRAM		
5020	0000	ERRR,		/CAF OR CLEAR THE WORLD
5021	6007	6007		
5022	7604	LAS		
5023	7006	RTL		
5024	7700	SMA CLA		/CHECK SWR2 FOR INH, PRINT
5025	4503	JMS I XSORT		/GET ERROR MESSAGE
5026	4510	JMS I XBELL		/RING BELL
5027	4460	JMS I XCLREG		
5030	2220	ISZ ERRO		
5031	7604	LAS		
5032	0015	AND K0200		/CHECK SWR4 FOR INH, HLT
5033	7650	SNA CLA		/MONITOR ERROR HALT, READ TYPEOUT
5034	7402	HLT		/AND REFERENCE LISTING;
		EHLT1,		
5035	7604	LAS		
5036	0013	AND K0100		
5037	7640	SZA CLA		/CHECK SWR5 FOR SCOPE LOOP
5040	5243	JMP IN		
5041	2220	ISZ ERRO		

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5042	5620	JMP I ERRO	/ENTER SCOPE LOOP
5043	1620	TAD I ERRO	
5044	3200	DCA NERRO	
5045	5600	JMP I NERRO	
5046	0000	BELL,	
5047	7604	0000	
5050	0116	LAS	
5051	7640	AND K0400	
5052	5646	SZA CLA	
5053	1006	JMP I BELL	
5054	4507	TAD K0207	
5055	5646	JMS I XTYPE	
5056	0000	JMP I BELL	
5057	6046	TYPE,	
5060	6041	0000	
5061	5260	TLS	
5062	7200	TSF	
5063	6042	JMP I=1	
5064	5656	CLA	
5065	0000	TCF	
5066	7300	JMP I TYPE	
5067	3041	CLREG,	
5070	3042	CLA CLL	/CLEAR THE AC AND LINK
5071	3043	DCA REGC	
5072	3070	DCA REGD	
5073	3071	DCA SEND	
5074	7604	DCA RECEV	
5075	0117	LAS	
5076	7650	AND K6000	
5077	7340	SNA CLA	
5100	3040	CLA CLL CM	
5101	5605	DCA REGA	
5102	0000	JMP I CLREG	
5103	6131	0000	
5104	5702	107A,	/FIELD SERVICE CHANGE
5105	2302	JMP I 107A	
5106	5702	ISZ 107A	
5107	0000	JMP I 107A	
5110	4352	0000	
5111	5707	107B,	/FIELD SERVICE CHANGE
5112	2307	813C	
5113	5707	JMP I 107B	
5114	0000	ISZ 107B	
5115	6133	JMP I 107B	
5116	5714	0000	
5117	2314	107C,	/FIELD SERVICE CHANGE
5120	5714	JMP I 107C	
		ISZ 107C	
		JMP I 107C	

ADDRESS	INSTRUCTION	COMMENT
5121	1070, 0000	
5122	DCA SEND	/SAVE OUTPUT FOR ERROR PRINTER
5123	TAD SEND	
5124	6130	/FIELD SERVICE CHANGE
5125	JMP I 107D	
5126	HLT	/SKIP TRAP, CLZE
5127	EHLT2,	
5128	107E,	
5129	0000	/FIELD SERVICE CHANGE
5130	6131	
5131	JMP I 107E	
5132	ISE 107E	
5133	JMP I 107E	
5134	0000	
5135	DCA SEND	/SAVE OUTPUT FOR ERROR PRINTER
5136	TAD SEND	
5137	6132	/FIELD SERVICE CHANGE
5138	JMP I 107F	
5139	HLT	/SKIP TRAP, CLOE
5140	EHLT3,	
5141	107F1,	
5142	0000	
5143	6132	/FIELD SERVICE CHANGE
5144	JMP I 107F1	
5145	HLT	/SKIP TRAP, CLOE
5146	107G,	
5147	0000	
5148	DCA SEND	/SAVE OUTPUT FOR ERROR PRINTER
5149	TAD SEND	
5150	6133	/FIELD SERVICE CHANGE
5151	JMP I 107G	
5152	HLT	/SKIP TRAP, CLAB
5153	EHLT5,	
5154	107H,	
5155	0000	
5156	6134	/FIELD SERVICE CHANGE
5157	SKP	
5158	HLT	/SKIP TRAP, CLEN
5159	DCA RECEV	/SAVE OUTPUT FOR ERROR PRINTER
5160	TAD RECEV	
5161	JMP I 107H	
5162	HLT	
5163	107I,	
5164	0000	
5165	6135	/FIELD SERVICE CHANGE
5166	SKP	
5167	HLT	/SKIP TRAP, CLSA
5168	DCA RECEV	/SAVE OUTPUT FOR ERROR PRINTER
5169	TAD RECEV	
5170	JMP I 107I	
5171	HLT	
5172	*5200	
5173	107J,	
5174	0000	
5175	6136	/FIELD SERVICE CHANGE
5176	SKP	
5177	HLT	/SKIP TRAP, CLBA
5178	DCA RECEV	/SAVE OUTPUT FOR ERROR PRINTER
5179	JMP I 107I	
5180	HLT	
5181	EHLT10,	
5182	107K,	
5183	0000	
5184	6137	/FIELD SERVICE CHANGE
5185	SKP	
5186	HLT	/SKIP TRAP, CLCB
5187	DCA RECEV	/SAVE OUTPUT FOR ERROR PRINTER
5188	TAD RECEV	
5189	JMP I 107K	
5190	HLT	
5191	EHLT11,	
5192	107L,	
5193	0000	
5194	6138	/FIELD SERVICE CHANGE
5195	SKP	
5196	HLT	/SKIP TRAP, CLCC
5197	DCA RECEV	/SAVE OUTPUT FOR ERROR PRINTER
5198	TAD RECEV	
5199	JMP I 107L	
5200	HLT	
5201	EHLT12,	
5202	107M,	
5203	0000	
5204	6139	/FIELD SERVICE CHANGE
5205	SKP	
5206	HLT	/SKIP TRAP, CLCD
5207	DCA RECEV	/SAVE OUTPUT FOR ERROR PRINTER
5208	TAD RECEV	
5209	JMP I 107M	
5210	HLT	
5211	EHLT13,	
5212	107N,	
5213	0000	
5214	6140	/FIELD SERVICE CHANGE
5215	SKP	
5216	HLT	/SKIP TRAP, CLCE
5217	DCA RECEV	/SAVE OUTPUT FOR ERROR PRINTER
5218	TAD RECEV	
5219	JMP I 107N	
5220	HLT	
5221	EHLT14,	
5222	107O,	
5223	0000	
5224	6141	/FIELD SERVICE CHANGE
5225	SKP	
5226	HLT	/SKIP TRAP, CLCF
5227	DCA RECEV	/SAVE OUTPUT FOR ERROR PRINTER
5228	TAD RECEV	
5229	JMP I 107O	
5230	HLT	
5231	EHLT15,	
5232	107P,	
5233	0000	
5234	6142	/FIELD SERVICE CHANGE
5235	SKP	
5236	HLT	/SKIP TRAP, CLCG
5237	DCA RECEV	/SAVE OUTPUT FOR ERROR PRINTER
5238	TAD RECEV	
5239	JMP I 107P	
5240	HLT	
5241	EHLT16,	
5242	107Q,	
5243	0000	
5244	6143	/FIELD SERVICE CHANGE
5245	SKP	
5246	HLT	/SKIP TRAP, CLCH
5247	DCA RECEV	/SAVE OUTPUT FOR ERROR PRINTER
5248	TAD RECEV	
5249	JMP I 107Q	
5250	HLT	
5251	EHLT17,	
5252	107R,	
5253	0000	
5254	6144	/FIELD SERVICE CHANGE
5255	SKP	
5256	HLT	/SKIP TRAP, CLCI
5257	DCA RECEV	/SAVE OUTPUT FOR ERROR PRINTER
5258	TAD RECEV	
5259	JMP I 107R	
5260	HLT	
5261	EHLT18,	
5262	107S,	
5263	0000	
5264	6145	/FIELD SERVICE CHANGE
5265	SKP	
5266	HLT	/SKIP TRAP, CLCJ
5267	DCA RECEV	/SAVE OUTPUT FOR ERROR PRINTER
5268	TAD RECEV	
5269	JMP I 107S	
5270	HLT	
5271	EHLT19,	
5272	107T,	
5273	0000	
5274	6146	/FIELD SERVICE CHANGE
5275	SKP	
5276	HLT	/SKIP TRAP, CLCK
5277	DCA RECEV	/SAVE OUTPUT FOR ERROR PRINTER
5278	TAD RECEV	
5279	JMP I 107T	
5280	HLT	
5281	EHLT20,	
5282	107U,	
5283	0000	
5284	6147	/FIELD SERVICE CHANGE
5285	SKP	
5286	HLT	/SKIP TRAP, CLCL
5287	DCA RECEV	/SAVE OUTPUT FOR ERROR PRINTER
5288	TAD RECEV	
5289	JMP I 107U	
5290	HLT	
5291	EHLT21,	
5292	107V,	
5293	0000	
5294	6148	/FIELD SERVICE CHANGE
5295	SKP	
5296	HLT	/SKIP TRAP, CLCM
5297	DCA RECEV	/SAVE OUTPUT FOR ERROR PRINTER
5298	TAD RECEV	
5299	JMP I 107V	
5300	HLT	
5301	EHLT22,	
5302	107W,	
5303	0000	
5304	6149	/FIELD SERVICE CHANGE
5305	SKP	
5306	HLT	/SKIP TRAP, CLCN
5307	DCA RECEV	/SAVE OUTPUT FOR ERROR PRINTER
5308	TAD RECEV	
5309	JMP I 107W	
5310	HLT	
5311	EHLT23,	
5312	107X,	
5313	0000	
5314	6150	/FIELD SERVICE CHANGE
5315	SKP	
5316	HLT	/SKIP TRAP, CLCO
5317	DCA RECEV	/SAVE OUTPUT FOR ERROR PRINTER
5318	TAD RECEV	
5319	JMP I 107X	
5320	HLT	
5321	EHLT24,	
5322	107Y,	
5323	0000	
5324	6151	/FIELD SERVICE CHANGE
5325	SKP	
5326	HLT	/SKIP TRAP, CLCP
5327	DCA RECEV	/SAVE OUTPUT FOR ERROR PRINTER
5328	TAD RECEV	
5329	JMP I 107Y	
5330	HLT	
5331	EHLT25,	
5332	107Z,	
5333	0000	
5334	6152	/FIELD SERVICE CHANGE
5335	SKP	
5336	HLT	/SKIP TRAP, CLCQ
5337	DCA RECEV	/SAVE OUTPUT FOR ERROR PRINTER
5338	TAD RECEV	
5339	JMP I 107Z	
5340	HLT	
5341	EHLT26,	
5342	107AA,	
5343	0000	
5344	6153	/FIELD SERVICE CHANGE
5345	SKP	
5346	HLT	/SKIP TRAP, CLCR
5347	DCA RECEV	/SAVE OUTPUT FOR ERROR PRINTER
5348	TAD RECEV	
5349	JMP I 107AA	
5350	HLT	
5351	EHLT27,	
5352	107AB,	
5353	0000	
5354	6154	/FIELD SERVICE CHANGE
5355	SKP	
5356	HLT	/SKIP TRAP, CLCS
5357	DCA RECEV	/SAVE OUTPUT FOR ERROR PRINTER
5358	TAD RECEV	
5359	JMP I 107AB	
5360	HLT	
5361	EHLT28,	
5362	107AC,	
5363	0000	
5364	6155	/FIELD SERVICE CHANGE
5365	SKP	
5366	HLT	/SKIP TRAP, CLCT
5367	DCA RECEV	/SAVE OUTPUT FOR ERROR PRINTER
5368	TAD RECEV	
5369	JMP I 107AC	
5370	HLT	
5371	EHLT29,	
5372	107AD,	
5373	0000	
5374	6156	/FIELD SERVICE CHANGE
5375	SKP	
5376	HLT	/SKIP TRAP, CLCU
5377	DCA RECEV	/SAVE OUTPUT FOR ERROR PRINTER
5378	TAD RECEV	
5379	JMP I 107AD	
5380	HLT	
5381	EHLT30,	
5382	107AE,	
5383	0000	
5384	6157	/FIELD SERVICE CHANGE
5385	SKP	
5386	HLT	/SKIP TRAP, CLCV
5387	DCA RECEV	/SAVE OUTPUT FOR ERROR PRINTER
5388	TAD RECEV	
5389	JMP I 107AE	
5390	HLT	
5391	EHLT31,	
5392	107AF,	
5393	0000	
5394	6158	/FIELD SERVICE CHANGE
5395	SKP	
5396	HLT	/SKIP TRAP, CLCW
5397	DCA RECEV	/SAVE OUTPUT FOR ERROR PRINTER
5398	TAD RECEV	
5399	JMP I 107AF	
5400	HLT	
5401	EHLT32,	
5402	107AG,	
5403	0000	
5404	6159	/FIELD SERVICE CHANGE
5405	SKP	
5406	HLT	/SKIP TRAP, CLCX
5407	DCA RECEV	/SAVE OUTPUT FOR ERROR PRINTER
5408	TAD RECEV	
5409	JMP I 107AG	
5410	HLT	
5411	EHLT33,	
5412	107AH,	
5413	0000	
5414	6160	/FIELD SERVICE CHANGE
5415	SKP	
5416	HLT	/SKIP TRAP, CLCY
5417	DCA RECEV	/SAVE OUTPUT FOR ERROR PRINTER
5418	TAD RECEV	
5419	JMP I 107AH	
5420	HLT	
5421	EHLT34,	
5422	107AI,	
5423	0000	
5424	6161	/FIELD SERVICE CHANGE
5425	SKP	
5426	HLT	/SKIP TRAP, CLCZ
5427	DCA RECEV	/SAVE OUTPUT FOR ERROR PRINTER
5428	TAD RECEV	
5429	JMP I 107AI	
5430	HLT	
5431	EHLT35,	
5432	107AJ,	
5433	0000	
5434	6162	/FIELD SERVICE CHANGE
5435	SKP	
5436	HLT	/SKIP TRAP, CLCA
5437	DCA RECEV	/SAVE OUTPUT FOR ERROR PRINTER
5438	TAD RECEV	
5439	JMP I 107AJ	
5440	HLT	
5441	EHLT36,	
5442	107AK,	
5443	0000	
5444	6163	/FIELD SERVICE CHANGE
5445	SKP	
5446	HLT	/SKIP TRAP, CLCB
5447	DCA RECEV	/SAVE OUTPUT FOR ERROR PRINTER
5448	TAD RECEV	
5449	JMP I 107AK	
5450	HLT	
5451	EHLT37,	
5452	107AL,	
5453	0000	
5454	6164	/FIELD SERVICE CHANGE
5455	SKP	
5456	HLT	/SKIP TRAP, CLCC
5457	DCA RECEV	/SAVE OUTPUT FOR ERROR PRINTER
5458	TAD RECEV	
5459	JMP I 107AL	
5460	HLT	
5461	EHLT38,	
5462	107AM,	
5463	0000	
5464	6165	/FIELD SERVICE CHANGE
5465	SKP	
5466	HLT	/SKIP TRAP, CLCD
5467	DCA RECEV	/SAVE OUTPUT FOR ERROR PRINTER
5468	TAD RECEV	
5469	JMP I 107AM	
5470	HLT	
5471	EHLT39,	
5472	107AN,	
5473	0000	
5474	6166	/FIELD SERVICE CHANGE
5475	SKP	
5476	HLT	/SKIP TRAP, CLCE
5477	DCA RECEV	/SAVE OUTPUT FOR ERROR PRINTER
5478	TAD RECEV	
5479	JMP I 107AN	
5480	HLT	
5481	EHLT40,	
5482	107AO,	
5483	0000	
5484	6167	/FIELD SERVICE CHANGE
5485	SKP	
5486	HLT	/SKIP TRAP, CLCF
5487	DCA RECEV	/SAVE OUTPUT FOR ERROR PRINTER
5488	TAD RECEV	
5489	JMP I 107AO	
5490	HLT	
5491	EHLT41,	
5492	107AP,	

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5205	1071	TAD RECEV		
5206	5600	JMP I 107J		
5207	0000	/ 10TK, 0000		/FIELD SERVICE CHANGE
5210	6137	6137		
5211	7410	SKP		
5212	7402	HLT		/SKIP TRAP, CLCA
5213	3071	DCA RECEV		/SAVE OUTPUT FOR ERROR PRINTER
5214	1071	TAD RECEV		
5215	5607	JMP I 10TK		
5216	0000	/ SNDRV, 0000		
5217	7041	CIA		
5220	1070	TAD SEND		/WAS SEND AND RECEV THE SAME ?
5221	7640	SEA CLA		
5222	2216	ISE SNDRV		
5223	5616	JMP I SNDRV		
5224	0000	/ RANDOM, 0000		
5225	1044	TAD REGE		/CLEAR THE AC AND LINK
5226	7004	RAL		/SET FOR PI RETURN
5227	7430	SEL		/CLEAR THE AC AND LINK
5230	1410	TAD I 10		/READ THE COUNTER
5231	3044	DCA REGE		
5232	1044	TAD REGE		
5233	5624	JMP I RANDOM		
5234	0000	/ PIG05, 0000		
5235	7300	CLA CLL		
5236	1234	TAD PRETS		
5237	3002	DCA 2		
5240	6001	ION		
5241	7300	CLA CLL		
5242	1076	TAD KREGC		
5243	3042	DCA REGE		
5244	4433	JMS I X10TR		
5245	2042	ISE REGE		
5246	9245	JMP I 01		
5247	2043	ISE REGE		
5250	5241	JMP I 07		
5251	2234	ISE PIG05		
5252	6002	PIRET5, IOF		/DISABLE PROGRAM INTERRUPT
5253	5634	JMP I PIG05		
5254	5252	/ PRETS, PIRETS		
5255	0000	/ PIG01, 0000		
5256	7300	CLA CLL		/CLEAR THE AC AND LINK
5257	1267	TAD PRET1		/SET FOR PI RETURN
5260	3002	DCA 2		/ENABLE PROGRAM INTERRUPT
5261	6001	ION		
5262	4434	JMS I X15Z		
5263	7410	SKP		
5264	2255	ISE PIG01		
5265	6002	IOF		/DISABLE PROGRAM INTERRUPT
5266	5635	JMP I PIG01		

5267	5264	/	PRET1,	PIRET1	
5270	0000	/	PIG02,	0000	/CLEAR THE AC AND LINK
5271	7300			CLA CLL	
5272	1301			TAD PRET2	
5273	3002			DCA 2	/SET FOR P1 RETURN
5274	6001			ION	
5275	4454			JMS I X1S2	/WAIT
5276	2270			ISZ PIG02	
5277	6002		PIRET2,	IOF	
5300	5670			JMP I PIG02	
5301	5277	/	PRET2,	PIRET2	
5302	0000	/	SYNG,	0000	
5303	4422			JMS I X10T0	
5304	5303			JMP I 01	
5305	4422			JMS I X10T0	
5306	5305			JMP I 01	
5307	5702			JMP I SYNG	
5310	0000	/	ISZLOP,	0000	
5311	7300			CLA CLL	
5312	1113			TAD KTIOPS	
5313	3045			DCA REGF	
5314	7001			IAC	
5315	7000			NOP	
5316	2043			ISZ REGD	
5317	5314			JMP I 03	
5320	2045			ISZ REGF	
5321	5314			JMP I 05	
5322	5710			JMP I ISZLOP	
5323	0000	/	PIG03,	0000	/CLEAR THE AC AND LINK
5324	7300			CLA CLL	
5325	1335			TAD PRETC	
5326	3002			DCA 2	
5327	6001			ION	
5330	7000			NOP	
5331	7410			SKP	
5332	2323		RETC,	ISZ PIG03	
5333	6002			IOF	
5334	5723			JMP I PIG03	
5335	5332	/	PRETC,	RETC	
5336	0000	/	PIG04,	0000	/CLEAR THE AC AND LINK
5337	7300			CLA CLL	
5340	1347			TAD PRETD	
5341	3002			DCA 2	
5342	6001			ION	
5343	7000			NOP	
5344	2336			ISZ PIG04	
5345	6002		RETD,	IOF	

JMP I PIG04

PRETD,

RET0

10TS,

0000

6132

6134

6132

6134

6132

6134

6132

6134

JMP I 10TS

10TS1,

0000

6133

6136

6133

6136

6133

6136

6133

6136

JMP I 10TSI

10TS2,

0000

6133

6137

6133

6137

6133

6137

JMP I 10TS2

45400

10TS3,

0000

6134

CMA

6130

CMA

6134

CMA

6130

CMA

6134

JMP I 10TS3

CLOCK,

0000

LAS

AND K0007

DCA CLOCKS

JMP I CLOCX

ROUTINE TO TYPE OCTAL NUMBERS

ENTER WITH NUMBER IN AC AND LINK 0

OCTEL,

0000

5400

0000

6134

7040

6130

7040

6134

7040

6130

7040

6134

5600

0000

7004

0007

3075

5613

0000

5420

0000

COMPLEMENT THE AC

COMPLEMENT THE AC

COMPLEMENT THE AC

COMPLEMENT THE AC


```
5421 7006 RTL
5422 7006 RTL REG8
5423 3041 DCA REG8
5424 1130 TAD K7774
5425 3042 DCA REGC
5426 1041 TAD REG8
5427 0007 AND K0007
5430 1123 TAD K0260
5431 4507 JMS I XTYPE
5432 1041 TAD REG8
5433 7006 RTL
5434 7004 RAL REG8
5435 3041 DCA REGC
5436 2042 ISZ REGC
5437 5226 JMP I 011
5440 5620 JMP I OCTEL

/ROUTINE FOR CRLF
/
CRLF, 0000
5441 0000 CLA CLL
5442 7300 TAD K0215
5443 1134 JMS I XTYPE
5444 4507 TAD K0212
5445 1135 JMS I XTYPE
5446 4507 JMP I CRLF
5447 5641 /ROUTINE TO TYPE CLOCK

/
POPR, 0000
5450 0000 CLA CLL
5451 7300 TAD KTAQCK
5452 1262 TAD CLOCKS
5453 1075 DCA I+1
5454 3255 TAD KTAQCK
5455 1262 JMS I XOCTEL
5456 4504 JMS I XPRINT
5457 4506 FMES
5460 6026 JMP I POPR
5461 5650

/
KTAQCK, TAD CLKNO
/
CLKNO, 0001
5463 0001 0050
5464 0050 0100
5465 0100 0120
5466 0120 0500
5467 0500 5000
5470 5000

/ROUTINE TO SORT ERROR MESSAGES
/
SORT, 0000
5471 0000 CLA CLL
5472 7300 JMS I XCRLF
5473 4501 TAD I ERROR
5474 1473 DCA REGE
5475 3044
```


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5476	JMS I XMESS		/GO PRINT TEST + ADDRESS
5477	TAD I REGE		
5500	RTR		
5501	RTR		
5502	RTR		
5503	RTR		
5504	AND K0017		/MOVE IT TO BITS 8-11
5505	DCA REGE		/MASK 8-11
5506	CLA CLL		/SAVE POINTER
5507	TAD REGE		/CLEAR THE AC AND LINK
5510	TAD KTADM		/GET POINTER
5511	DCA I+1		
5512	TAD KTADM		/MODIFIED BY TEST
5513	DCA I+3		/STORE MESSAGE POINTER
5514	JMS I XCRLF		/CRLF
5515	JMS I XPRINT		/PRINT MESSAGE
5516	0000		/MODIFIED MESSAGE POINTER
5517	CLA CLL		/GET MESSAGE POINTER
5520	TAD REGE		/IS IT GREATER THAN
5521	TAD K7772		
5522	SNL CLA		
5523	JMP I SORT		
5524	JMS I XREG		
5525	JMP I SORT		
5526	KTADM, TAD KTMX		
5527	KTMX,		
5530	MES1		
5531	MES2		
5532	MES3		
5533	MES4		
5534	MES5		
5535	MES6		
5536	MES7		
5537	MES8		
5538	MES9		
5539	MES10		
5540	MES11		
5541			
5542	/ROUTINE TO PRINT TEST + ADDRESS		
5543	MES,		
5544	0000		
5545	CLA CLL		/CLEAR THE AC AND LINK
5546	JMS I XCRLF		/CRLF
5547	JMS I XPRINT		/GO PRINT TEST
5548	TMS		
5549	TAD I ERROR		/GET ERROR MESSAGE
5550	DCA REGD		/STORE MESSAGE POINTER
5551	TAD I REGD		
5552	AND K0577		/MASK 4-11
5553	JMS I XOCTEL		/GO PRINT NUMBER
5554	ISZ REGD		/UPDATE POINTER
5555	JMS I XPRINT		/GO PRINT STARTING ADDRESS
5556	AMES		
5557	TAD I REGD		

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5560	4504	JMS I XOCTEL		/GO PRINT NUMBER
5561	7300	CLA CLL		/CLEAR THE AC AND LINK
5562	5742	JMP I HESS		
		/ROUTINE TO PRINT AC		
		/		
5563	0000	PREG: 0000		/CRLF
5564	4501	JMS I XCRLF		/GO PRINT MESSAGE
5565	4506	JMS I XPRINT		
5566	6067	GMS		/GET GOOD AC
5567	1070	TAD SEND		/PRINT IT
5570	4504	JMS I XOCTEL		/PRINT BAD AC
5571	4506	JMS I XPRINT		
5572	6077	BMS		/GET BAD AC
5573	1071	TAD RECEV		/PRINT IT
5574	4504	JMS I XOCTEL		/CLEAR THE AC AND LINK
5575	7300	CLA CLL		
5576	5763	JMP I PREG		
		/		
		/+5600		
		/		
5600	0000	SETQ: 0000		/GET JMP I 2
5601	1100	TAD JMP12		/SET FOR PI RETURN
5602	3001	DCA I		
5603	5600	JMP I SETQ		
		/ROUTINE TO TYPE LISTING		
		/ENTER WITH JMS +1 EQUAL TO START OF LIST		
		/		
		PRINT: 0000		/CLEAR THE AC AND LINK
5604	0000	CLA CLL		/SET FOR RETURN +1
5605	7300	TAD I PRINT		/SAVE THE POINTER
5606	1604	ISE PRINT		/GET THE CHARACTER
5607	2204	DCA REG8		/MASK BITS 0-5
5610	3041	TAD I REG8		/END OF MESSAGE
5611	1441	AND K7700		/YES, EXIT
5612	0012	SNA		/IS AC MINUS
5613	7450	JMP EXIT		/NO, SET THE LINK
5614	5240	SMA		
5615	7500	SHL		
5616	7020	CLL		
5617	7001	IAC		
5620	7012	RTR		
5621	7012	RTR		
5622	7012	RTR		
5623	4507	JMS I XTYPE		/PRINT THE CHARACTER
5624	1441	TAD I REG8		/GET THE WORD
5625	0133	AND K0077		/MASK BITS 6-11
5626	7450	SNA		/END OF MESSAGE
5627	5240	JMP EXIT		/YES, EXIT
5630	1125	TAD K3740		/NO, ADD A CONSTANT
5631	7500	SMA		
5632	1124	TAD K4100		
5633	1126	TAD K0240		
5634	4507	JMS I XTYPE		/TYPE THE CHARACTER
5635	2041	ISE REG8		/UPDATE WORD LIST

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5636	CLA CLL		/CLEAR THE AC AND LINK
5637	JMP PRINT+5		
5640	CLA CLL		/CLEAR THE AC AND LINK
5641	JMP I PRINT		/YES EXIT
	/ROUTINE TO WAIT FOR OVERFLOWS		
	XWAIT,		
5642	0000		/SAVE THE AC
5643	DCA SAVAC		
5644	CLA CLL CHA RAL		
5645	TAD XWAIT		/SET FOR RETURN ADDRESS
5646	DCA XWAIT		
5647	ISE REG8		
5650	JMP RETURN		
5651	ISE REGF		
5652	JMP RETURN		
5653	CLA CLL CHA IAC RAL		
5654	TAD XWAIT		
5655	DCA XWAIT		/UPDATE FOR ERROR RETURN
5656	TAD SAVAC		
5657	JMP I XWAIT		
	RETURN,		
	SWLAS,		
5660	0000		
5661	LAS		/CHECK FOR EXTERNAL CLOCK SCOPE LOOP
5662	AND K0010		/ENTER SCOPE LOOP
5663	SEA CLA		
5664	JMP CLKIN		
5665	LAS		/CHECK FOR EXTERNAL PULSE SCOPE LOOP
5666	AND K0020		/ENTER SCOPE LOOP
5667	SEA CLA		/AC TO 7777
5670	JMP EXTER		
5671	CLA CLL CHA		
5672	DCA KTIOPS		
5673	LAS		
5674	AND K0007		
5675	SEA CLA		
5676	JMP I+3		
5677	TAD KPRMTI		
5700	DCA KTIOPS		
5701	LAS		/GET HIS SWITCHES
5702	RAL		/GET BIT 1
5703	SPA CLA		/TEST SCHMITT
5704	JMP I SWLAS		/GET HIS SWITCHES
5705	ISE SWLAS		/TEST DK8=EP
5706	LAS		/TEST DK8=EA OR DK8=EC
5707	SPA CLA		
5710	JMP I SWLAS		
5711	ISE SWLAS		
5712	JMP I SWLAS		
	EXTER,		
5713	CLA CLL CHA		/NOT 6133, CLAB
5714	JMS I XIOTD		
5715	CLA CLL		
5716	TAD K0040		

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5717	1147		TAD K0000	/GET ENABLES
5720	4425		JMS I XIOT0	/IOT 6132, CLOE
5721	4424		JMS I XIOTE	/IOT 6131, CLSK
5722	5321		JMP I=1	/WAIT FOR OVERFLOW
5723	6007		6007	/CAF OR CLEAR THE WORLD
5724	5313		JMP EXTER	/CONTINUE WITH SCOPE LOOP
5725	7340	/ CLKIN,	CLA CLL CMA	/AC TO 7777
5726	4427		JMS I XIOT0	/IOT 6133, CLAB
5727	7300		CLA CLL	
5730	1013		TAD K0100	/GET ENABLES
5731	4426		JMS I XIOT01	/IOT 6132, CLOE
5732	4424		JMS I XIOTE	/IOT 6131, CLSK
5733	5332		JMP I=1	/WAIT FOR OPERATOR
5734	6007		6007	/CAF OR CLEAR THE WORLD
5735	1006		TAD K0207	
5736	4507		JMS I XTYPE	/TTY SIGNAL
5737	5325		JMP CLKIN	/LOOP
5740	0000	/ PASS,	0000	
5741	4501		JMS I XCRLP	/CRLF
5742	4506		JMS I XPRINT	/PRINT MESSAGE
5743	6014		PHES	
5744	6007		6007	
5745	5740		JMP I PASS	
5746	0000	/ GTAD,	0000	/GET SELECTED CLOCK
5747	1075		TAD CLOCKS	
5750	1354		TAD CLTAD	
5751	3746		DCA I GTAD	
5752	2346		ISE GTAD	
5753	5746		JMP I GTAD	
5754	5755	/ CLTAD,	CLTAD #1	
5755	6000		6000	
5756	1612		1612	
5757	4776		4776	
5760	5367		5367	
5761	7306		7306	
5762	7747		7747	
5763	4000		4000	
5764	1527		1527	
5765	4552		4552	
5766	5217		5217	
5767	7276		7276	
5770	7741		7741	
5771	0000	/ TIMCLK,	0000	
5772	7604		LAS	
5773	0114		AND K6007	
5774	7650		SNA CLA	
5775	1166		TAD PATCH	
5776	1012		TAD K7700	
5777	5771		JMP I TIMCLK	

0000 0413
0001 7005
0002 4003
0003 1417
0004 2313
0005 2340
0006 0411
0007 0107
0010 1617
0011 2324
0012 1103
0013 0000
0014 0413
0015 7005
0016 4020
0017 0123
0020 2340
0021 0317
0022 1520
0023 1405
0024 2405
0025 0000
0026 4003
0027 2025
0030 4003
0031 1417
0032 0313
0033 4023
0034 0514
0035 0503
0036 2405
0037 0440
0040 0231
0041 4017
0042 2005
0043 2201
0044 2417
0045 2200
0046 2405
0047 2324
0050 4000
0051 4006
0052 0111
0053 1405
0054 0454
0055 4023
0056 2401
0057 2224
0060 1116
0061 0740
0062 0104
0063 0422
0064 0523
0065 2340
0066 0000

DKMES, TEXT ?DK8E CLOCKS DIAGNOSTIC?

PMES, TEXT ?DK8E PASS COMPLETE?

PMES, TEXT ? CPS CLOCK SELECTED BY OPERATOR?

TMES, TEXT ?TEST ?

AMES, TEXT ? FAILED, STARTING ADDRESS ?

GMES, TEXT ?THE GOOD AC # ?

6067 2410
6070 0540
6071 0717
6072 1704
6073 4001
6074 0340
6075 7540
6076 0000
6077 4001
6100 1604
6101 4002
6102 0104
6103 4001
6104 0340
6105 7540
6106 0000
6107 0314
6110 1703
6111 1340
6112 2313
6113 1120
6114 4006
6115 0111
6116 1405
6117 0454
6120 4016
6121 1740
6122 2313
6123 1120
6124 4005
6125 3020
6126 0503
6127 2405
6130 0400
6131 0314
6132 1703
6133 1340
6134 2313
6135 1120
6136 4006
6137 0111
6140 1405
6141 0454
6142 4023
6143 1411
6144 2040
6145 0530
6146 2005
6147 0324
6150 0504
6151 0000
6152 2022
6153 1707
6154 2201
6155 1540

BMES, TEXT ? AND BAD AC # ?

MES1, TEXT ?CLOCK SKIP FAILED, NO SKIP EXPECTED?

MES2, TEXT ?CLOCK SKIP FAILED, SKIP EXPECTED?

MES3, TEXT ?PROGRAM INTERRUPT FAILED, NO INTERRUPT EXPECTED?

6156 1116
6157 2405
6160 2222
6161 2520
6162 2440
6163 0601
6164 1114
6165 0504
6166 5440
6167 1617
6170 4011
6171 1624
6172 0522
6173 2225
6174 2024
6175 4005
6176 3020
6177 0503
6200 2405
6201 0400
6202 2022
6203 1707
6204 2201
6205 1540
6206 1116
6207 2405
6210 2222
6211 2520
6212 2440
6213 0601
6214 1114
6215 0504
6216 5440
6217 1116
6220 2405
6221 2222
6222 2520
6223 2440
6224 0530
6225 2005
6226 0324
6227 0504
6230 0000
6231 0314
6232 1905
6233 1340
6234 1725
6235 2420
6236 2524
6237 4006
6240 0111
6241 1405
6242 0454
6243 4003
6244 1417

MESS4, TEXT ?PROGRAM INTERRUPT FAILED, INTERRUPT EXPECTED?

MESS5, TEXT ?CLOCK OUTPUT FAILED, CLOCK FREQUENCY FAST?

6245 0313
6246 4006
6247 2205
6250 2125
6251 0516
6252 0331
6253 4006
6254 0123
6255 2400
6256 0314
6257 1703
6260 1340
6261 1725
6262 2420
6263 2524
6264 4006
6265 0111
6266 1405
6267 0454
6270 4003
6271 1417
6272 0313
6273 4006
6274 2205
6275 2125
6276 0516
6277 0331
6300 4023
6301 1417
6302 2700
6303 2410
6304 0540
6305 0103
6306 4027
6307 0123
6310 4003
6311 1001
6312 1607
6313 0504
6314 4002
6315 3140
6316 0140
6317 0314
6320 1705
6321 1340
6322 1117
6323 2400
6324 0314
6325 1703
6326 1340
6327 0225
6330 0606
6331 0522
6332 4022
6333 0507

MESS: TEXT ?CLOCK OUTPUT FAILED: CLOCK FREQUENCY SLOW?

MESS: TEXT ?THE IC WAS CHANGED BY A CLOCK 10??

MESS: TEXT ?CLOCK BUFFER REGISTER AND AC TRANSFER FAILED?

6334 1123
6335 2405
6336 2240
6337 0116
6340 0440
6341 0103
6342 4024
6343 2201
6344 1623
6345 0605
6346 2240
6347 0601
6350 1114
6351 0504
6352 0000
6353 0314
6354 1703
6355 1340
6356 0317
6357 2516
6360 2405
6361 2240
6362 2205
6363 0711
6364 2324
6365 0522
6366 4001
6367 1604
6370 4001
6371 0340
6372 2422
6373 0116
6374 2306
6375 0522
6376 4006
6377 0111
6400 1405
6401 0400
6402 0314
6403 1703
6404 1340
6405 0516
6406 0102
6407 1405
6410 4622
6411 0507
6412 1123
6413 2405
6414 2240
6415 0116
6416 0440
6417 0103
6420 4024
6421 2201
6422 1623

MESS9, TEXT 7CLOCK COUNTER REGISTER AND AC TRANSFER FAILED?

MESS10, TEXT 7CLOCK ENABLE REGISTER AND AC TRANSFER FAILED?

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6423 0605
6424 2240
6425 0601
6426 1114
6427 0504
6430 0000
6431 0314
6432 1703
6433 1340
6434 2324
6435 0124
6436 2523
6437 4022
6440 0507
6441 1123
6442 2405
6443 2240
6444 0116
6445 0440
6446 0103
6447 4024
6450 2201
6451 1623
6452 0005
6453 2240
6454 0601
6455 1114
6456 0504
6457 0000

HES11, TEXT PCLOCK STATUS REGISTER AND AC TRANSFER FAILED?

S

[illegible]

AMES	SETO	LOOP	0077	5600
AUT010	SKPHAT	MES1	6107	0046
BEGIN	SNDRV	MES10	6402	5216
BELL	SORT	MES11	6431	5471
BGNEAC	SWLAS	MES2	6131	5660
BMS	SYNC	MES3	6152	5302
CLKIN	T113A	MES4	6202	1655
CLKNO	T113B	MES5	6231	1646
CLOCK	T114A	MES6	6256	1673
CLOCKS	T114B	MES7	6303	1664
CLRRG	T11A	MES8	6324	0354
CLYAD	T120A	MES9	6353	1751
CLYF	T121A	MES10	5542	1766
CLYF	T122A	MES11	5000	2014
CLYF	T122B	MES12	0072	1775
CLYF	T123A	MES13	5420	2043
CLYF	T123B	MES14	5015	2024
CLYF	T124A	MES15	0061	2072
CLYF	T124B	MES16	0062	2033
CLYF	T125A	MES17	5740	2120
CLYF	T125B	MES18	0166	2102
CLYF	T126A	MES19	5255	2147
CLYF	T126B	MES20	5270	2125
CLYF	T127A	MES21	5323	2200
CLYF	T128A	MES22	5336	0366
CLYF	T129A	MES23	5234	2220
CLYF	T130A	MES24	5264	2306
CLYF	T131A	MES25	5277	2273
CLYF	T132A	MES26	5252	2555
CLYF	T133A	MES27	6014	2537
CLYF	T134A	MES28	5450	2603
CLYF	T135A	MES29	5563	2565
CLYF	T136A	MES30	5267	2631
CLYF	T137A	MES31	5301	2613
CLYF	T138A	MES32	5334	2657
CLYF	T139A	MES33	5335	2641
CLYF	T140A	MES34	5347	2705
CLYF	T141A	MES35	5604	2667
CLYF	T142A	MES36	5224	2733
CLYF	T143A	MES37	0055	2715
CLYF	T144A	MES38	0071	3254
CLYF	T145A	MES39	0040	3257
CLYF	T146A	MES40	0041	3244
CLYF	T147A	MES41	0042	3240
CLYF	T148A	MES42	0043	3283
CLYF	T149A	MES43	0044	3306
CLYF	T150A	MES44	0045	3273
CLYF	T151A	MES45	5332	3267
CLYF	T152A	MES46	5345	3336
CLYF	T153A	MES47	5656	3341
CLYF	T154A	MES48	0011	3326
CLYF	T155A	MES49	0070	3323

T175A	3391	TST110	TST167	3157	TST244	4562
T175A1	3394	TST111	TST17	0431	TST245	4602
T175B	3361	TST112	TST170	3177	TST246	4621
T175B1	3356	TST113	TST171	3215	TST247	4643
T176A	3421	TST114	TST172	3233	TST25	0520
T176A1	3424	TST115	TST173	3262	TST250	4663
T176B	3411	TST116	TST174	3311	TST251	4706
T176B1	3405	TST117	TST175	3344	TST26	0534
T177A	3491	TST118	TST176	3377	TST27	0547
T177A1	3454	TST119	TST177	3427	TST3	0265
T177B	3441	TST120	TST178	0251	TST30	0570
T177B1	3435	TST121	TST179	0441	TST31	0601
T200A	3501	TST122	TST200	3457	TST32	0615
T200A1	3504	TST123	TST201	3507	TST33	0626
T200B	3471	TST124	TST202	3561	TST34	0637
T200B1	3465	TST125	TST203	3573	TST35	0647
T201A	3551	TST126	TST204	3605	TST36	0657
T201B	3522	TST127	TST205	3617	TST37	0667
T202A	3632	TST128	TST206	3635	TST4	0273
T202A1	3650	TST129	TST207	3653	TST40	0677
T202A2	3666	TST130	TST208	0452	TST41	0711
T202A3	3764	TST131	TST209	3671	TST42	0722
T202A4	4003	TST132	TST210	3704	TST43	0733
T202A5	4022	TST133	TST211	3720	TST44	0746
T202A6	4073	TST134	TST212	3734	TST45	0761
T202A7	4265	TST135	TST213	3750	TST46	1000
T202A8	0775	TST136	TST214	3767	TST47	1017
T202A9	0783	TST137	TST215	4006	TST5	0303
T202A10	1014	TST138	TST216	4025	TST50	1036
T202A11	1005	TST139	TST217	0463	TST51	1055
T202A12	1034	TST140	TST218	4050	TST52	1070
T202A13	1052	TST141	TST219	4073	TST53	1102
T202A14	1040	TST142	TST220	4116	TST54	1115
T202A15	1332	TST143	TST221	4133	TST55	1130
T202A16	1351	TST144	TST222	4150	TST56	1142
T202A17	1371	TST145	TST223	4165	TST57	1153
T202A18	1391	TST146	TST224	4204	TST6	0322
T202A19	1416	TST147	TST225	4223	TST60	1164
T202A20	1436	TST148	TST226	4242	TST61	1177
T202A21	1456	TST149	TST227	4270	TST62	1212
T202A22	1476	TST150	TST228	4310	TST63	1227
T202A23	1496	TST151	TST229	4330	TST64	1244
T202A24	1516	TST152	TST230	4350	TST65	1255
T202A25	1536	TST153	TST231	4372	TST66	1271
T202A26	1556	TST154	TST232	4414	TST67	1302
T202A27	1576	TST155	TST233	4435	TST7	0330
T202A28	1596	TST156	TST234	4456	TST70	1316
T202A29	1616	TST157	TST235	4477	TST71	1335
T202A30	1636	TST158	TST236	4520	TST72	1354
T202A31	1656	TST159	TST237	4541	TST73	1367
T202A32	1676	TST160	TST238		TST74	1404
T202A33	1696	TST161	TST239		TST75	1421
T202A34	1716	TST162	TST240			
T202A35	1736	TST163	TST241			
T202A36	1756	TST164	TST242			
T202A37	1776	TST165	TST243			
T202A38	1796	TST166				

V142
YST76 1435
YST77 1431
YYPE 5056
XBELL 0110
XCLOCK 0074
XCLOCK 0060
XCRLF 0101
XCRS1 0171
XCRS2 0172
XCRS3 0173
XCRS4 0174
XCRS5 0175
XDKSEP 0063
XGETM 0167
XGTAD 0067
XIOTA 0020
XIOTB 0021
XIOTC 0022
XIOTD 0023
XIOTE 0024
XIOTF 0025
XIOTF1 0026
XIOTG 0027
XIOTH 0030
XIOTI 0031
XIOTJ 0032
XIOTK 0033
XIOTS 0034
XIOTS1 0035
XIOTS2 0036
XIOTS3 0037
XIOT4 0038
XLAS 0066
XMESS 0105
XNIYY 0064
XNITT1 0065
XCTEL 0104
XOPR 0105
XPASS 0170
XPIG01 0047
XPIG02 0050
XPIG03 0051
XPIG04 0052
XPIG05 0053
XPIG06 0106
XREG 0102
XSETO 0164
XSNDRV 0096
XSDRY 0103
XSYNC 0097
XTYPE 0107
XWAT 5642

ERRORS DETECTED: 0

LINKS GENERATED: 0

RUNTIME: 21 SECONDS

3K CORE USED